Gleanings in Bee Culture

Established 1873

CONTENTS

November, 1942

Honey Markets	644-645
Care of Extracting Equipment at the End of the Season—Morley Pettit	649-651
Honeydew—Allen Latham	652-653
More Uniformity in Colony Performance—E. C. Bessonet	654-655
Beeswax Needed Now	656-657
Honey Fruit Cakes—Mrs. Benj. Nielsen	658-659
Nosema Disease Contributes to Winter Losses and Queen Supersedure—C. L. Farrar	660-661
A Note on Housed Bees—Leo T. Murray	662
The South is a Bonny Land—Grant D. Morse	663
Bricks Without Straw—H. H. Root	664
Our Cover Picture	664
First Impressions of a Bee Meeting—Amy Leno	665
A Victory Honey Stand—Harry Coverstone	666
Patent Hives One Hundred Years Ago—C. H. Gilbert	666-667
Bolivia Beekeeper Gets a Big Crop—L. M. Shedd	667
High Humidity Increases Moisture Content of Honey—W. A. Stephen	668
A Hat with a History—E. R. Root	668-669
In Every Thanksgiving Basket—C. M. Litteljohn	669-670
Melting Up Burr Comb and Bits of Wax	670
Scale Hive Observations—Jack Deyell	670
Second Glances—C. M. Isaacson	671
Editorials	672-674
From North, East, West and South	675-682
Amendment of Regulations for Obtaining Sugar for Bee Feeding	682
American Honey Institute News Notes	683
Minnesota and North Dakota Field Meet at Detroit Lakes	684-685
Talks to Beekeepers—M. J. Deyell	686-687
Just News	688-689
A Symposium on Wintering	690-693
Spinster Jane Says	694
Asked and Answered	695

Subscription Rates—United States, one year, $1.00; two years for $1.50; three years for $2.00. Single copy, 10 cents. Other countries, 25c per year additional for postage. Discontinuance—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of address—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by postoffice money order, bank draft, express money order or check. Contribution to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. Advertising Rates: Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability: While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class mail matter at the Postoffice at Medina, Ohio, Published monthly.

The A. I. Root Company, Publishers, Medina, Ohio

E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor; D. C. Babcock, Circulation Manager.

B & Z Library

CONTAINERS

Large Stock on Hand
Wide Range for Selection
Prompt Shipment Assured
Order Your Needs Now

• • •

BEESWAX WANTED

Send your beeswax, cappings, or old comb to us for highest prices.
Prompt and fair settlement made.
Shipping tags furnished on request

LET US SERVE YOU

The A. I. Root Company of Iowa
Council Bluffs, Iowa

Honey Containers

We have a complete stock of all sizes glass and tin containers for packing honey

Tin Containers
5 lb., 10 lb. pails; 60 lb. cans.

Glass Containers
5 lb., 2½ lb. glass pails.
½ lb., 1 lb., 2 lb. Masterline Jar
½ lb., 1 lb., 2 lb. Bee Hive Jars.

WRITE FOR NEW PRICE LIST ON CONTAINERS!

Remember—we also carry a complete line of other honey packages including shipping cases and comb honey cartons

August Lotz Company
Boyd, Wisconsin

Root QUALITY
BEE SUPPLIES

Honey Containers

• • •

Labels

A. I. Root Company
OF
Indianapolis
121 No. Alabama St.
Indianapolis, Indiana

HONEY CONTAINERS

GOOD SERVICE is what we are trying our utmost to give your orders! All manufacturers are slow in sending goods through, but we are trying to get the merchandise well in advance of your needs.

Right now we have large stocks of 5 and 10-lb. Pails, 60-lb. Cans, Glass Jars, all sizes of Comb Honey Cartons, Shipping Cases,—in fact, everything you will need to market your honey. Send for complete price list.

Old combs and cappings—have you any to render? Let us do this messy job for you. Our rates are reasonable and we oftentimes get enough more wax to pay for doing the work. We are always in the market for both BEESWAX AND HONEY. Let us know how much you have.

A. I. ROOT CO. of SYRACUSE
Midland Ave. and Tallman St.
SYRACUSE, N. Y.

SERVES YOU BEST

HONEY CONTAINERS

PRICES F. O. B. NEW YORK

HONEY JARS MASTERLINE ROUND * SKEP *	With White Caps	No. in case	Price per case	Ship. Wt. per case
	8-oz. Jars*	24	$0.73	10 lbs
	16-oz. Jars *	24	.88	12 lbs
	32-oz. Jars *	12	.62	15 lbs
	48-oz. Jars	12	.67	15 lbs

5-lb. Glass Honey Pails (without bails), 6 in case, **50c per case**
Shipping weight, 10 lbs.
Do Not Order Glass Shipped by Parcel Post

TIN PAILS

5-lb. Pails, 12 to carton; Wt., 13 lbs	$ .90 per Carton
5-lb. Pails, 50 to carton; Wt., 29 lbs	3.10 per Carton
10-lb. Pails, 6 to carton; Wt., 12 lbs	.75 per Carton
10-lb. Pails, 50 to carton; Wt., 45 lbs	4.90 per Carton
60-lb. Cans	40c each; six, $2.25

THE A. I. ROOT COMPANY

12 West 21st Street, New York City

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S Economy Foundation

Not excelled for quality, strength and workmanship

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons

Rt. 4 Bay City, Mich.

Honey Containers

Both glass and tin in standard sizes. Send for prices.

"ROOT'S" Bee Supplies

Buy now for next season.

Beeswax Wanted

Let us quote you prices.

M. H. Hunt & Son

510 N. Cedar St. Lansing, Mich.

The Monthly Honey Market

U. S. GOVERNMENT REPORT
Information from producing Areas (First half of October)

(Prices generally refer to sales at wholesale by beekeepers f.o.b. shipping points except as otherwise noted.)

PLAINS AREA:—

Red River Valley of Minnesota and North Dakota. The weather has been generally favorable and warm during the first two weeks of October, but no nectar is available due to the cold weather of late September and only a little pollen being gathered by the bees. Most all beekeepers have started to pack hives for winter, although weather has been a little too warm for this in most sections. Many apiarists are somewhat behind in their seasonal work due to lack of skilled laber. In the southern part of the Valley fair winter stores have been put away but in the more northern portions of the Valley, which were hardest hit by the early cold stores are short and it is expected that some feeding will be necessary. Sales extracted f.o.b.. White clover carlots 11½-12½c per lb. cans included; 11-11½c per lb. cans and cases returned; single 60s mostly 12c per lb.; Sweetclover Wild Buckwheat carlots 11½c per lb. Mixed Flowers single 60s 10c per lb., small pails 12c. Delivered Chicago some carlots — White Clover, 11c per lb.. cans and cases returned.

Iowa. The honey flow is now over in practically all parts of Iowa and extracting is about completed. All commercial factors agree the Iowa crop is much short of last year. Moisture conditions are favorable for next year's plants. White Dutch clover looks promising, but a number of beekeepers report less sweetclover will be available next year due to a shift by farmers in some parts of the State to red clover, soybeans and flax. Honey prices remain about the same with extracted case to ton lots 11-12c, a few 12½c per lb.; bulk comb 14c per lb. Delivered Chicago extracted case to ton lots 11¾-12c per lb. Beeswax 40-41c per lb. f.o.b.

Nebraska. Recent weather has been more favorable than in September and has been a big help to the beekeepers in taking off the last of the supers and completing extracting. The final crop in most sections looks like about 50 percent of normal with little from the fall flow. Colony, moisture and plant conditions are now very favorable. Some fall feeding will likely be necessary in most yards. The honey market has been more active with several large beekeepers completely sold out. Sales Sweetclover case to ton lots 10-11½c, mostly 11-11½c cases and cans returned; single 60s 11½-13c, mostly around 12c cans returned; small pails 12-15c per lb. Bulk comb 20c per lb. retail.

Kansas. The weather has been mild. Bees have scarcely made a living since the frosts of late September. In some sections bees have been robbing excessively and some re-queening has been done in anticipation of hampered queen shipments next spring. In most yards bees are in good condition with a fair amount of brood and a plentiful supply of winter stores. Sales extracted White Sweetclover case to ton lots 11c per lb.; single 60s 11-13c per lb.; small pails 15c per lb.; 1-lb. glass jars 18c per lb.; Light Amber Mixed Flowers single 60s 12c. Beeswax Light Yellow 45c per lb.

Missouri.. The fall flow is over in most parts of Missouri except for a few late asters. The surplus fall flow was late but colonies in most sections are in fair shape and are in especially good shape where moved to river bottoms for Spanish needle. The crop is generally considered about half that of last season although individual yields of as high as 120 pounds surplus have been reported. Sales extracted, heartsease, Spanish needle blend, small pails 12c per lb., 1-lb. cups 13c per 1-lb.; bulk comb 15c per lb.

EAST CENTRAL AND NORTH CENTRAL STATES:—

Michigan. On the northern peninsula bees have been made ready for winter. There is still some honey to be extracted. The crop was very short with little fall honey for bees to winter on. Stores are generally short. On the southern peninsula there was almost no fall surplus of honey. Fall plants were in excellent condition but weather was unfavorable for bees to work. Extracting is practically completed and many beekeepers have most of their colonies packed for winter but others do not expect to start this until later in the month. Colonies are generally in good condition although most beekeepers report them to be somewhat light in stores and anticipate some feeding will be necessary. Most of the more progressive beekeepers are planing to leave sufficient honey for stores and rely only slightly on sugar for feeding. The market has been fairly active with some of the larger producers reporting the crop cleaned up. Sales extracted, White clover case to ton lots mostly 12c per lb., a few 13c per lb.; single 60s 12-13c, small pails 15-17c per lb., a few higher; Mixed Flowers Amber, case to ton lots 10½c per lb. Beeswax 40-45c, mostly

SUMMARY

The 1942 honey crop has been made and largely extracted except in the Southern States where some fall flowers are still available. Over most of the country weather was ideal during the first two weeks of October for bee yard operations. In most 44-45c per lb.

TOO LATE TO CLASSIFY

FOR SALE—500 colonies bees in heart of Michigan's Cloverland, all in modern food-chamber hives with excluders and 2,000 supers. Also ten acres with modern home and honey extracting plant. On Federal Highway. 1941 model one-ton truck and one-ton trailer, all tired, same. Owner operator selling to accept position. For further details write, Box No. 134, Gleanings in Bee Culture, Medina, Ohio.

PLEASE DO NOT DISTURB apiary signs. They appeal to reason and inform apiary visitors or marauders the vital war needs. Educate friends, prevent pilfering. Satisfaction or money back. 25 cents each, 8 for dollar, postpaid. Koenitzer, 1610 Humbolt, Manhattan, Kansas.

WANTED: Simplicity 45-frame or other good large extractor complete. Full details first letter. Dun Rovin' Ranch, Catarina, Texas.

areas bees were able to fly, but in the Northern States all sources of nectar were killed by earlier frosts and bees could obtain only a little pollen for winter stores. The fall flow was disappointing in nearly all sections, due to cool, rainy weather during the latter part of August and much of September which hampered bee activity. In the more northern group of States where winter may come at any time now beekeepers are rapidly preparing their colonies for winter while in other sections they are waiting for a little cooler weather before starting wintering operations. For the country as a whole colonies are considered to be in fairly good condition, with fair populations of young bees, but many sections report some shortage of food stores and expect that considerable winter feeding will be necessary.

Labor shortages are becoming increasingly serious. Many beekeepers are having great difficulty in obtaining skilled bee yard and honey house help, and we get an increasing number of reports of bee men killing off their bees and storing their equipment for the duration. On the other hand some beekeepers contemplate some expansion in operations next year.

The marketing picture is still unsettled. Many buyers and beekeepers are holding off until the situation becomes further clarified. Some bottlers and dealers are unable to find sufficient supplies at prices under their March ceilings to meet the demand. Despite this demand has been good and prices generally average a little higher. Larger buyers are scouring the country for honey supplies and while many beekeepers are not inclined to sell at present, it is felt that a larger proportion of the honey crop has been moved than is normal for this season. Reports indicate that in many sections of the country movement of the dark grades for manufacturing purposes has declined considerably. Some bakers are either discontinuing many lines of goods in which honey formerly was used or are substituting less expensive ingredients. On the other hand, darker grades of honey are moving into retail channels more readily than usual.

Monthly Report of Honey Producers

Early in October we sent the following questions to the honey producers: 1. What is the final average yield per colony to date this season in your locality of (a) extracted honey? (b) comb honey? Give answer in pounds. 2. How does this compare with the average yield for your locality? Give answer in per cent. 3. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality, during the past month, for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 4. What are prices when sold to grocers in case lots of (a) extracted in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, fancy and No. 1, per case? 5. What is the retail price to consumers in your locality for (a) extracted honey, in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) Comb honey, fancy and No. 1, per section? 6. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 7. What is the condition of the colonies for winter in your locality compared wtih normal considering the number and age of bees and the supply of stores? Give answer in per cent. The answers received are tabulated as follows:

Oct. Date Rec.	State.	Name.	1. Final Aver. Ex.	1. Final Aver. Comb.	2. Comparison.	3. Carload lots. Ex.	3. Carload lots. Comb.	4. To grocers. Ex.	4. To grocers. Comb.	5. To consumers. Ex.	5. To consumers. Comb.	6. Movement.	7. Cond. of colo.
19	B. C.	(A. W. Finlay)			100	.15				1.35			100
13	S-Calif.	(L. L. Andrews)	20		33⅓	.12				.95	.23	Fair	70
19	C-Calif.	(Davis Bros.)	90		100	.11				1.05		Fair	100
13	SE-Colo.	(Otis E. Adcock)	30		50	.10		.65	4.50	.80	.25	Fair	100
12	E-Conn.	(Allen Latham)	65	60	200			.75	4.50	1.00	.25	Fair	75
12	S-Fla.	(C. C. Cook)	40		60	.08		.60		.80		Rapid	100
12	C-Fla.	(Harry Hewitt)	45		90			.68		.80		Fair	100
12	SEGa.	(J. J. Wilder)	65	50	90	.11¼	.12*	.70	.75*	.85	1.00*	Rapid	100
20	NC-Ills.	(A. L. Kildow)	15	5	20	.11	3.50			.75	.15	Fair	100
8	S-Ills.	(Carl E. Killion)	10		10	.11¾	4.35		4.50	1.14	.25	Rapid	85
12	NC-Ind.	(T. C. Johnson)	35	15	30			.70	4.50	.85	.25	Fair	75
9	NW-Ind.	(E. S. Miller)	25	15	25			.75	4.00	.90	.25	Fair	90
15	W-Iowa	(E. G. Brown	90		50	.12				.80		Fair	100
12	C-Md.	(S.G. Crocker)	50	50	50			.75	3.60	1.00	.30	Slow	
13	N-Mich.	(Ira D. Bartlett)	75		60	.12		.80		1.00		Fair	75
12	S-Mich.	(Floyd Markam)	50		40	.12		.75		1.00		Rapid	
9	C-Mich.	(E. D. Townsend)				.13				.95		Rapid	100
16	W-Minn.	(B. L. Morehouse)	75		80			.78		.95		Rapid	90
19	W-Nev.	(Mrs. E. G. Norton)	20		90	.10		.80				Rapid	98
13	W-Nev.	(Geo. G. Schweis)	80	40	80	.10	3.87	.65	4.25	.85	.23	Rapid	100
12	NW-N. Y.	(Geo. B. Howe)	50	50	50	.12	4.80	.70	4.50	.92	.27	Rapid	100
12	C-N. Y.	(F. W. Lesser)	40		50	.13						Rapid	90
12	SE-N. C.	(W. J. Martin)	150		100	.09		.75		.95	.25	Fair	100
16	NC-Okla.	(C. F. Stiles)	30		80			.65		.92	.20	Fair	100
9	C-Penn.	(Harry Beaver)	80	40	90			.70	4.80	.80	.25	Rapid	100
12	SE-Pa.	(D. C. Gilham)	10	2	20	.13		.80	4.25	1.10	.25	Fair	75
12	E-Tenn.	(W. L. Walling)	5		10			.65		1.00		Fair	50
13	C-Texas	(T. A. Bowden)	20		20			.60		.75		Rapid	100
12	S-Texas	(J. N. Mayes)	25		30	.08		36		40		Rapid	75
12	S-Texas	(H. B. Parks)	42		98			45		58		Fair	100
13	N-Utah	(Wm. Moran)	60		90	.10½		80		95		Fair	100
16	S-Va.	(T. C. Asher)	50	35	90	.11	4.50	.75	4.50	89	.25	Fair	90
19	SE-Wisc.	(N. E. France)	120		100	.12½		.60		.63†	.15	Fair	100

* Chunk honey
† Own containers

KELLEY—"The Bee Man"

RUSH

Buy Supplies NOW

Send us a List of Your Needs

The Walter T. Kelley Co., Paducah, Ky.

Manufacturers of Bee Supplies

2 Years $1.50

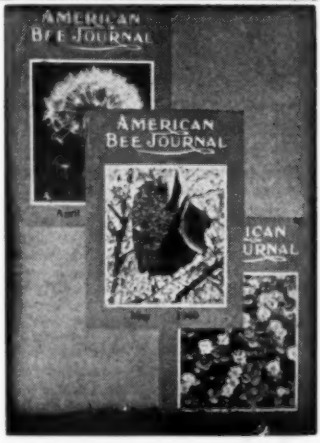
American Bee Journal—monthly: published and edited by beekeepers for beekeepers. Full of pictures and tips on care of bees and selling of honey.

—SAMPLE COPY FREE.

$1.00 a year, 2 years $1.50 in U. S. and Canada. Combined with Gleanings in Bee Culture, both magazines, **ONE YEAR, $1.60.** This offer good only in the United States.

Address—

American Bee Journal, Hamilton, Ill.



One Year's Subscription FREE

Hundreds of new beekeepers have started this year. Their success is important. **"Talks to Beekeepers"** in Gleanings in Bee Culture will help them.

Mail Us:

3 One-year Subscriptions

or

2 Two-year Subscriptions

(At the Regular Rates)

And we will enter your subscription FREE for one year.

Mail to Circulation Manager

GLEANINGS IN BEE CULTURE

Medina, Ohio

Queens ✣ Queens ✣ Queens

Garon's Progeny-Test Queens

Also DAUGHTERS OF STOCK BRED FOR RESISTANCE TO A. F. B.

Clipped or by Airmail at No Extra Cost.

Prices for both strains:

1 to 10, at 50c
11 to 25, at 45c
26 and over, 40c

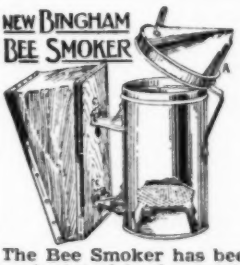
This is our last 1942 ad offering queens at Summer Prices. Send your orders while they last.

GARON BEE COMPANY, **DONALDSONVILLE, LA.**
Telephone 8614 **Telegrams.....Western Union**

THANK YOU

We appreciate your generous patronage during 1942. Early arrangements for 1943 should be considered as important during these critical times. Correspondence solicited.

BESSONET BEE CO., Donaldsonville, La.



For About 75 Years

The Bee Smoker has been the most important tool in the outstanding development of American Beekeeping. It has made large quantity, commercial honey production possible. Little can be accomplished without the Bee Smoker.
In this time of scarcity and restricted supply of materials, conserve such items as Smokers, Extractors and other items made of metal. Thus spread their use over time and place

A. G. Woodman Company
Grand Rapids, Michigan, U. S. A.

MUTH'S WAX RENDERING DEPARTMENT IS ALWAYS BUSY

Our steam wax presses do perfect work rendering all the wax from the comb and cappings . . . Thousands of beekeepers from all over the nation send their combs to MUTH for rendering . . .

THE FRED. W. MUTH CO.
Pearl and Walnut Cincinnati, Ohio

ROOT SERVICE From CHICAGO

CONTAINERS

We have large stocks and all packages offered elsewhere.

Glass Packages
Tin Packages
Cartons and Wrappers
Shipping Cases

Write for present listing.

We are always in the market for Beeswax and Honey. Tell us how much you have.

A. I. Root Co. of Chicago
224 West Huron Street
Chicago, Illinois

BEESWAX

You will want to save all the wax you possibly can. Prices are high. Demand is good. The Army and Navy will need a lot of it in the coming twelve months. Write us for prices. They are high now.

Cull out your poor combs; cut deep cappings; prevent loss by bee-moth. Save your combs, scrapings, cappings, and slumgum (slumgum is refuse from rendering of combs and cappings). Ship to us in lots of 100 lbs. or more by freight collect and let us render it for you. We can please you.

Mr. May says:

Dadant & Sons
Hamilton, Illinois.

"I received credit slip for the beeswax you rendered out of the three bags of slumgum recently sent you. I was sure surprised, as I actually thought you might get 15 pounds or less out of it, and the way it turned out you got 31½ pounds, or just about as much as I got out of the old crooked combs when I rendered them. Your steam presses sure get the wax, and I am well pleased with the results." Fred H. May.

Illinois, July 25, 1942.

If you have several hundred pounds of slumgum accumulated, send us 100 pounds and let us test it for you. Ship by freight collect. If it contains no beeswax we will charge you nothing for the test. We will pay the freight. If it does contain a fair amount of wax, we will make a reasonable charge and pay for beeswax secured. **You risk nothing.**

Our terms for rendering sent on request.

Dadant & Sons, Hamilton, Illinois

Makers of Famous Foundation

Crimp-wired — Plain — Surplus

Vol. 70
No. 11

Gleanings in Bee Culture

November
1942

Care of Extracting Equipment at the End of the Season

By Morley Pettit

This subject that the editor has asked me to write about takes me back in memory to the years of honey production in Ontario when we extracted eighty to a hundred thousand pounds of clover honey each August, and then started over again in September to take off the last of the supers and extract twenty to twenty-five thousand pounds of mixed clover and buckwheat honey.

It was a long grind in a hot steamy room, but there finally came a day—it might be one of those bright still Canadian autumn days when the trees were turned to bronze and gold—when the extractors would cease whirling for the last time, and the last set of sticky empty combs would be put in their supers, and someone would exclaim, "Well, that's the one we've been looking for", or else "That's what the shoemaker threw at his wife," meaning the "last" or "awl", as you please.

The boss would say "We're all done extracting for another year," and the grand clean-up would begin. The steam capping melter had its final cleaning out. The wax separator was cleaned out for the last time, the best of the wax going directly into moulds, and the slumgum with broken and discarded combs going into the steam chest to be melted down into wax. The extractors were completely drained and the last bit of honey pumped up to the settling tanks. The final lot of "wet" combs were stacked out in the yard behind the honey-house to be cleaned out by the bees. No, this did not spread disease. We were mighty careful about that.

Then the cement floor in the extracting room was flushed out with hot water and scrubbed until the water running down the drain was really clean. The extractors were hosed out with hot water and scrubbed inside and out until no stickiness could be felt on any of their surfaces. All storage tanks and everything that had come in contact with honey or wax was cleaned in the same way. There used to be an idea that extractors and tanks should be left smeared with honey until time to use them again. I find that thorough cleaning and complete drying keeps the metal surfaces in better condition. The one exception may be square sixty-pound tins which rust so easily and are spoiled by so little inside rust, and can scarcely be dried except in a dry-kiln. Aluminum paint is a good preservative for inside the extractor as well as out.

If while extracting we thought of improvements or repairs to the equipment that would increase efficiency, we made them as soon as possible after we were through extracting. We should at least write down notes on ideas that come to us while the machinery is running. That is the time when the best ideas come. They are so clear then that there seems no possibility of forgetting them, but the next job of final preparation for winter crowds so hard on the heels of the extracting that unless written down they are more than likely gone with the wind until you are right in the

thick of the same job a year hence with no time to make those little improvements you might have made during the inactive season.

I have mentioned the use of steam and hot water, which leads up to the importance of a steam boiler. I consider that no honey-house is complete without this source of heat for cleaning, melting, etc. My experience also showed me that no small boiler such as a beekeeper would use is complete without automatic heat. A gas or oil burner must be very convenient but blower-coal is what I have used with a great deal of satisfaction, with a blower controlled by thermostat on the steam pressure. An automatic stoker would be still better, but too expensive for the average beekeeper. With a steady steam supply you can do all sorts of useful things while the main extracting job is going on. You can have a steam chest in one corner of the room for melting bad combs and slumgum, and it can be arranged to deliver pure wax without pressing and not much waste. This paragraph is leading up to an important feature of "care of equipment", which includes **saving wax.**

If help is sufficient and properly arranged, all top-bars of combs are scraped clean before they get to the uncapping machine. The supers when emptied are scraped out inside. The wet combs coming from the extractors are sorted before they go into supers again. The present demand for beeswax makes it important to save the scrapings, and the steam chest is right there ready to receive them. Straining the wax through burlap strains out most of the propolis. It is also important to sort out all bad combs and render them into wax. Because a comb is built on foundation does not prove that it is a good comb. The sorter picks out not only drone or broken combs but sagged combs, and it does not take much sag to do two things to a comb, either of which makes it undesirable in the brood nest. Sagging because of insufficient support when carrying a load in hot weather drags the cells in the upper part of the comb out of shape so the queen will not lay in them, and more than likely compresses the cells in the lower part so that the workers emerging from them will be dwarfed.

If the price controller leaves the ceiling high enough to make the extra expense profitable we can contribute a large amount of wax to the war effort by culling out all but near-perfect combs and fixing up a nice lot of new frames with wiring well braced and three-ply or other reinforced foundation for next year. We could even leave an inch of comb in the old frames for starters and put them on as second supers in a good honey flow next summer. If the flow is heavy enough they would be filled almost as fast as foundation, and would yield a nice lot of wax as well as honey in the fall of 1943. This time top supering will not do.

Combating Wax Moth

Now to come back to the finishing up after the last day of extracting: The supers of good combs have all been stacked out in the yard, staggered to let the bees in freely but covered to keep them dry. In Ontario, we found that leaving combs outdoors subject to cool nights until hot weather was past would protect them from wax worms provided the honey-house never got actually infested. For years we never fumigated and by being careful had no loss from this cause. But there came a time when divided interests and a series of hot dry summers caused a lot of old combs to be neglected in storage and for the first time in my lifetime wax moths became established in my honey-house, and then there was trouble.

If you really want to know about wax worms come down to the Deep South where they thrive all through the year. We think this has something to do with the small amount of AFB in Georgia, for as soon as a colony is weakened from any cause the wax worms eat up the combs so quickly that the menace of infected material is removed at once. In eighteen years of beekeeping in Georgia I have never seen a case of AFB altho I have 1,500 colonies of my own and plenty of neighbors. Down here where the ground never freezes and it never snows, it is the common practice to put the supers of empty combs back on the hives for the bees to take care of, but it is better and quite practical to have a tight comb-room where they may be stored and fumigated. After my recent bitter experience in Ontario I would advise everyone everywhere to have the room where combs are stored made tight enough to fumigate. It is quite simple to place one of those little old sheet iron wood heaters just inside the door, pack in it some crumpled

paper and pour powdered sulphur over the paper. Touch a match to the paper and as soon as you are sure the sulphur is going to burn close the door and stay away for a day or so. Repeat in about a month and your combs are practically safe until next summer, even in Georgia. For safety's sake we fumigate every month until the combs are taken out and used again. We do not lose a single comb and do not see any disadvantage in this simple inexpensive way of protecting stored combs.

Cleaning Excluders

The sulphur fumes will also take care of mice fairly well but we make doubly sure by using queen excluders on top and bottom of every stack of supers. For free circulation in fumigating we slip in little strips of wood about an eighth inch thick (screen binding strips for packages) between the supers as they are stacked up straight, then only an excluder on top for mice.

The remaining principal item of equipment for extracted honey production is the queen excluders. Perhaps I should say "If you use them". Well I always did and feel that I always will, but that is not part of this discussion. The excluders come off the hives covered with wax and propolis, and by the way, the hive top bars are the same. It is part of the duty of the one removing the honey to scrape top bars before placing the cover down where it is to spend the winter. It would be easy to save all these scrapings as the beekeeper should have his wax "scrap pile" just like everyone has his metal scrap pile. One way to clean excluders is to leave them piled in a room subject to outside temperatures and when freezing weather comes go out there and suffer while you scrape off the brittle wax. A quicker and more comfortable way is to stick them in the steam chest on edge, and a few minutes steaming will cause most of the wax to run down, then take them out and finish the job with a wire brush while they are still scalding hot. I believe some boil them in lye but I never did like that nor its effect on the wooden frames. The metal bound all wire excluders that have appeared on the market in recent years seem very satisfactory and take steaming with no bad effects.

Tifton, Georgia.

[In saying that straining frame scrapings through burlap removes most of the propolis, Mr. Pettit no doubt has in mind scrapings of burr comb. If the scrapings are mainly of propolis, no ordinary strainer will separate the beeswax from the resinous gums. Practically all, except bits of cocoons and lumps of pollen, go through the strainer with the beeswax. Such a mixture cannot properly be sold as beeswax for it is heavy with resin and the resin makes trouble frequently. Better keep melted propolis separate and sell it for what it is, a mixture. The resin does no harm in grafting wax nor in some other formulae, but resin does do harm in comb foundation, candles, most polishes, etc. —Ed.]

• • •

Part of a 300-colony apiary owned by Ed. G. Brown, Sergeant Bluff, Iowa, near Sioux City in a sweet clover area.

Honeydew

By Allen Latham

Beekeepers who live in localities where honeydew is either unknown or a rarity are fortunate. Those localities are usually mostly treeless or have only trees which are not subject to visitations of plant lice. Though there may be forms of honeydew which do not originate through plant lice, most of them are the secretions of these insects.

Most flows of honeydew come suddenly and as quickly go. Plant lice, technically known as aphides, come quickly and go as quickly. The insect has some very interesting points. For some seven generations there are no males and the individuals are wingless. Then comes a generation of winged insects both male and female. Flying and driven by the wind these winged forms become widely distributed. After mating the females are not at all slow in becoming mothers.

They do not lay eggs but give birth to tiny lice that are almost all legs. The little things come into the world so quickly that a female will have a dozen or more tiny forms of life clustered about her rear end, some just born and some several hours old. In less than two days there will be countless insects from this one mother, for there will not be only her daughters, but there will be her granddaughters and great granddaughters. Because no sooner is the young aphis born than she begins to suck the sap of the plant upon which she rests, and grows so rapidly that she herself begins to give birth to young aphides, and these in turn do the same.

The aphis has many species like most insects, and she has her enemies. She also has her friends. Some forms of aphides are known as ant-cows. Ants and aphis are mutually benefited. The ant protects the aphis, and the aphis feeds the ant. Indeed, it is quite probable that the sole reason the aphis secretes a sweetish substance is to attract ants. Ants stand near the clusters of aphides and attack any intruder. If one puts his finger close to these aphis clusters an ant may run upon the finger and begin to bite it. Ants are even said to carry the aphides into their nests and then to carry them out again to place them on some succulent plant to foster the secretion of the honeydew. Ants will stroke the backs of individual aphides to encourage them to eject the sweet secretion.

Let it be distinctly understood—honeydew is a secretion and not an excretion. The aphis has two little tubes upon her back which correspond to the teats of a cow and from these tubes the honeydew issues just as milk issues from the teats of the cow. Nor should one think for a moment that this honeydew is necessarily a filthy substance unfit to eat. I have eaten honeydew of very good flavor and not objectionable in color. Honeydews vary as much in character as do the plants from which they originate.

In this part of New England the worst honeydew comes from aphides living on the rock maples. This honeydew is filthy in both odor and taste, and as it quickly hardens in the combs is exceedingly difficult to dispose of. About 15 years ago there was a very abundant flow of this honeydew. In the morning hours there would be a drop of honeydew on the tips of every leaf, and the entire top surface of each leaf would glisten in the sunshine. All objects beneath such a tree would be sticky, and any one who parked his car under a maple tree had reason to regret it.

For about three weeks the flow was so abundant that all colonies of bees filled every comb available with the miserable stuff. In my own case all my extracting combs were solid with it and the sumac flow was just ready to come on. I had no combs for that flow and could not extract the honeydew as it was solid in the cells. I had to soak these combs in water after uncapping them and shake out the contents. I accumulated two tons or more of this product and in later years used it as spring feed. This honeydew is absolutely fatal to bees in winter. The bees cannot digest it nor get much heat out of it. Even in early spring when flights are few they will die on it.

Here there are two other common forms of honeydew, that from the witch hazel and that from the oaks. Others there may be, but I am not familiar with them. I may mention one exception. In my earliest bee-

keeping in Massachusetts the elm trees furnished a honeydew of peculiar form, for this honeydew fell like manna on the ground. Under some elm trees it lay like small pellets of tapioca. As the witch hazel is not abundant the honeydew from that source is slight, but the oaks are abundant. Usually, if not always, the honeydew from this source is dark—probably due to gallic acid. Unlike that secretion from the maples this honeydew does not readily crystallize, and does not contain so much indigestible material. Bees can winter fairly well on it if there is a fair admixture of honey. It is very common here, occurring more or less nearly every year. Fortunately it does not occur abundantly every time. No less than three years in my own experience I have had sections solidly filled with it, and in other years I have had my section honey bordered next the wood with a black rim. (This honey I term widow-honey.)

This dark honeydew when blended with our sumac honey has a flavor not unlike that of Malaga raisins. A few days ago a friend was dining with me and I set a comb of this mixture before him. He liked the flavor so well that he ordered four five-gallon cans of the honeydew mixture. I have several customers who are very fond of this dark honeydew, one of them ordering 200 pounds of the chunk honey.

During the first World War there was a big lot of this dark honeydew gathered the year of the sugar shortage. My supply of all kinds of honey was early exhausted in the winter and my son and I went to my apiary in the middle of the winter and removed many of the side combs and took them into the shop and warmed them and extracted the mixture. It was sold at a high price to the sweet-hungry customers. I could have sold hundreds of pounds more of it that winter. Hence I am in hopes that I shall be able to dispose of my present crop. It cannot be sold as pure honey, but as it is wholesome and of fair flavor it can be moved.

That winter during the first World War was not a mild one, but in spite of our disturbance of the colonies by removing side combs in the dead of winter, no colonies were lost and all came through in fair condition. Hence New Englanders need not fear this product in their hives. The other honeydew was gathered earlier and is in the upper parts of the combs. If bees are fed some syrup so that during the earlier months they will live on that and later consume the dark mixture, and not reach the red mixture till spring, they should not suffer. However, I have known colonies to work through the better food and reach the candied red honeydew in mid-winter, and always with disastrous results. Dead bees and filthy combs and hive result. I once attempted to feed this red honeydew in March to an apiary short on stores. I put a few pounds over the inner cover so that the bees could work up through the hole in the inner cover and get the food. I lost many of the colonies and all were badly set back by this food. When they are forced to eat this honeydew from the maples they need a flight almost daily.

The solidified portion of this red honeydew is so solid that when combs of the same are melted up and one thinks all is liquefied and pours off the liquid he will often find in the bottom of the vessel hundreds of hexagonal little columns of brownish sugar at the bottom—crystallized honey still unmelted. I have seen combs of this product, which, when uncapped, present almost a solid surface of hardened material, not over 10 percent of the contents of the combs being liquid. Not only is the product poison to the bees but they cannot dissolve it in cold weather. They can eat but little of it and that little is fatal.

There are other interesting facts about honeydews, but this article is already becoming too lengthy, so I will close by urging beekeepers to be heartened and hope for a better season in 1943. Sell your honeydew to anyone who likes it, but be careful about bottling it for the general trade. Tell the truth about the product and assure everyone that it is wholesome even though insects are its source. Bees are insects. I have known children to refuse to eat pure honey because they did not wish to eat anything "that came from bugs".

Norwichtown, Conn.

[There appeared to be a little honeydew in some hives around Medina during August. Since then a fall flow from goldenrod and aster has come and we hope the honeydew is buried deeply enough under the fall honey, that it may not be used by bees until next spring.—Ed.]

More Uniformity in Colony Performance Needed

By E. C. Bessonet

E. C. Bessonet

The matter of variation in colony performance requires considerable study to determine the factors which are contributing to the variations. In some yards, it may be one or more factors responsible for the lack of uniformity. When variations reach a high proportion, the honey crop is curtailed to a serious extent and when bees are operated for packages, the per colony production is materially decreased

Commercial beekeepers are aware of the fact that colonies which fail to develop normally require special attention and this tends to complicate operating plans.

Our analysis of the troubles indicates that many factors enter into the picture and in order to help the beekeeper overcome his trouble, the major factors will be covered which are largely responsible for variations.

Arrangement of Hives

Beekeepers should give the matter of arranging colonies every possible consideration, as too much regularity causes serious drifting and subsequent lack of uniformity in population and production. Since population is closely associated with production, any procedure which will help the bees by preventing drifting will greatly increase production.

Colonies in long regular rows where natural objects like trees and shrubs are not present to help the bees find their hives, will cause serious drifting and a wide variation in population. Arranging colonies in small groups facing different directions usually prevents drifting and such yards will have more uniformity providing the other factors having the same effect are not present. Protection from cold winds will help the entire yard, but will not assure uniformity in population and production.

Combs and Their Effect on Uniformity

We find some beekeepers who are particular about their brood combs and these are usually the successful class. However, many beekeepers give little consideration to combs and seldom make any attempt to provide good worker combs for the queens. If queens are expected to do their best, it is up to the beekeepers to select good combs for the brood chamber. Therefore, brood combs enter into the picture as a factor responsible for variations.

Poor combs with a large percentage of drone cells will produce an excess of drones which will consume much of the surplus honey. When checking over non-productive colonies it will pay to check the combs as a possible source of trouble.

Food Reserves as a Factor in Colony Development

Good beekeeping practices demand considerable effort on the part of the beekeeper to provide ample food reserves which include honey and pollen. We must bear in mind that queens will slow down on egg laying when a shortage of pollen and honey exists and this is serious when the time is due for colonies to build up for the flow, or for the production of package bees.

The best time for the northern honey producer to check for honey and pollen is just before bees are packed for winter. Colonies will be found to have an excess of pollen which

can be divided and given to colonies lacking an ample reserve. In most yards queenless colonies are found which contain a large amount of pollen and this pollen can be used to good advantage where needed.

It is readily acknowledged that many colonies having good queens are handicapped in the spring and prove to be non-productive due to food shortages. When the cause is from this source, good management can prevent it and the beekeeper is well paid for his efforts.

Dr. C. L. Farrar has conclusive evidence that pollen plays a vital role in brood-rearing. It would be possible for beekeepers to gather pollen and feed it to colonies needing it during the spring. Greater production strides will be made when we give more consideration to the needs of the bees during critical times.

Let us put more emphasis on adequate food reserves and strive to eliminate non-productive colonies which suffer from our neglect to provide for them.

Effects of Supersedure and Swarming on Production

During the spring rush period many things happen to our colonies which have a definite effect on the ultimate honey crop. Colonies that supersede, of course, are seriously set back and may never equal others in production, so we have another factor which causes variation in population and production. I will not cover the cause of supersedure, as this beekeeping problem requires more study and every year we find more excuses for supersedure. In research it has been found that supersedure in some stocks is more serious than others, therefore, special attention to stock which supersedes less is worthy of consideration.

The same is true of swarming. It has been found that swarming is more pronounced in some stocks than others. However, management of colonies will help the situation and reduce swarming considerably. Swarm prevention measures to suit a particular environmental area is recommended and should be followed religiously. Keep the force intact by all means if you want productive colonies.

Stock and Its Influence on Population

I have gradually worked up to this important phase of beekeeping. My opinion is that the major factor which contributes to colony variation is the result of poor stock.

Dr. C. L. Farrar has been testing stock for many years and the result of his work is the same year after year. In a recent report we find that the average for stocks tested ranged from 18 pounds per colony to 318 pounds which is most significant. If we could get a complete report on the testing, I am certain that the stock making a poor showing has caused any amount of trouble from one cause or another. Supersedure is usually associated with poor stock as well as scattered brood. Stock in this category is of course unprofitable.

Interest in better stock has been negligible for obvious reasons. An educational program directed towards creating more interest in productive stock is needed if profitable honey crops are desired.

In summarizing the factors which cause variation in population and production, we have found arrangement of hives, combs, food reserves, supersedure, swarming, and stock.

Stock no doubt has more influence on population than any other factor and something must be done to bring about a more uniform condition in the apiary through selective breeding. The per colony production can be increased with good stock if all other troubles are avoided by good management.

In bee breeding, queens are found to produce daughter queens which are uniform as to productive ability and others vary widely in production. The latter is the major cause of colony variation.

Our immediate problem is to change the attitude of the buyers of bees and queens in order to encourage greater effort on the part of the breeder to produce better stock.

Under the present circumstances the majority of the buyers are forcing the breeders to compete with prices which has a tendency to discourage stock improvement. There will be an adjustment at some future time, but the buyers will have to make their demand for better stock and place quality above price before the bee producer changes his policies. When quality competition is started, a new era in beekeeping will develop which will assure more profitable beekeeping.

Donaldsonville, Louisiana.

Beeswax Needed Now

The following suggestions from Dr. J. E. Eckert of the University of California, deserve the most careful reading:

University of California
College of Agriculture
Agricultural Experiment Station
October 3, 1942

Division of
Entomology and Parasitology
Davis, California

Gleanings in Bee Culture:

Every beekeeper should melt up at least 20% of his combs this winter in order to produce more beeswax, a much needed war product. This can be done readily if all super combs are examined and all imperfect combs culled for the melting pot. If a beekeeper doesn't have a wax press, he can crush the combs and send them to the nearest foundation manufacturer who will render them efficiently.

To further save beeswax for the war industries, I suggest that one frame per super be left with a single row of cells adhering to the top bar and be given back to the bees in this condition for them to build an entirely new comb for melting at the end of next season. If more than one comb can be culled from each hive body, it should be done this winter

Beeswax is needed now, not next year nor the year to follow.

Dr. J. E. Eckert
Associate Professor of Apiculture

Beeswax, a critical war product must be conserved, collected, and shipped. The situation is somewhat similar to that of the collection of scrap iron and steel. Hundreds of thousands are giving up articles that are useful but not immediately essential. A honey comb has a definite value,—certainly greater than that of a sheet of comb foundation, and yet, if it is in bad condition, if it contains a lot of drone cells or if it is crooked, that value shrinks. Surely, it is the duty of the beekeeper to cull out at least 10%, especially when by doing so he can produce more honey the next season.

Dr. Eckert's further suggestion of cutting out at least one comb per super, leaving a row or two of cells next the top bar for a starter, also deserves serious consideration. These are war times. What might be objectionable in peace times may be reasonable in these times.

In order not to unnecessarily burden transportation facilities, producers should **never** ship combs containing honey to some central point for rendering. Honey weighs nearly 70% more than beeswax. Regardless of how secure the shipment seems to be at the start, the vibration and the heat combine to produce the sorry results shown in the picture, opposite.

It is not only foolish to tax transportation facilities but positively dangerous to ship honey in old combs, for it leaks on the floors of box cars, and on the platforms of junction point stations, possibly spreading AFB. With railroads and trucks already overtaxed, that is reason enough to avoid shipping old combs for rendering that are heavy with honey.

Cappings and combs should always be rendered before shipment. Cappings should be rendered separately in order to prevent contamination by propolis and by the dark wax from old combs. Most of the wax may be skimmed from the water in which the cappings are melted. For best results put the cappings in a burlap sack under hot water and frequently punch them to change position of the wax. Finally weigh them down in order that the most wax possible can be obtained.

The few cocoons left in the sack should not be shipped for further rendering, while still wet and soggy. They should be dried, to save unnecessary weight and abnormally high freights.

The situation is much the same in regard to old combs but the process takes longer and not as great a percentage of the total amount of wax can be secured in this way. The final refuse should be pressed while hot, for much additional wax may be secured. Fortunate is the producer who has a press. However, without a press it is comparatively simple to make one using an automobile jack under a heavy cross-beam. Or, a very good substitute is a long heavy lever, such as an old telephone pole or the trunk of a tree, perhaps six inches in diameter at the butt. If a stone or brick wall can be found with a projecting water table or if there is such a wall available to which a projecting beam can be bolted, one end of the long lever can be placed under the projection and the tank or kettle containing the refuse to be pressed, set as close as possible underneath. The wall above should be heavy enough to obviate any danger of cracking by the upward pressure.

If no such wall is available, a substitute may be made if a log chain or

other heavy chain is available, the chain extending around a heavy piece of timber under a can or kettle and up over the end of the long lever. In this case there must be side braces to prevent the levers from swinging one way or the other. A combination of long lever and jack screw may be used.

While not absolutely necessary it is desirable to have the water boiling at the time of pressure. If steam is available a pipe introduced into the water will keep up the temperature. If not, the kettle may be supported on a heavy brick work to permit a fire underneath. The use of steam is more convenient.

The pressure should be intermittent. While the lever is raised, the slumgum in the burlap sack should be allowed to expand to full size in the hot water and then pressed again. As in the case of pressing capping wax out of refuse, the final slumgum should be thorcughly dried before shipping to avoid excessive freight rates on useless water.

This seems like a lot of work and yet the need of saving weight in shipments is imperative, because of the already over-taxed transportation facilities.

Dr. Eckert is right,—beeswax is needed now, not next year nor the year to follow.

Shipment of old combs and refuse for rendering. There was so much honey in the mass that it leaked out on station platforms at every junction point, a menace to the bees in many localities. The freight on the useless honey was also enormous.

Honey Fruit Cakes

By Mrs. Benj. Nielsen

Fruity mosaic fruit-cake you will be proud to serve.

Writing a food column these days is something of a feat, dear folk, especially if it must be prepared weeks in advance as this one is prepared. This kind of food is "frozen" and we patriotically find a substitute, then that class of food is "frozen" and the experimenting for a satisfactory substitute is on again. I'm not complaining, mind you (and I know you don't either) for it is progressively essential to our all-out war support. I'm just leading up to the fact that by the time you read these lines, it may not be possible to purchase some of the ingredients—fruits, peels, spices—called for in these honey fruit cake recipes. If you are lucky enough to have them in reserve, all well and good; if not, I know you will rise to the occasion and find adequate substitutes. It's fun to make a game of it. It is all for a good cause. A small contribution, to be sure, but never forget that it is the grand sum total of these seemingly insignificant bits that will finally win through to victory! And who knows the new or different possibilities we may discover about using our finest sweets? So, if you don't have candied fruit peels, you can snip assorted colored gumdrops into tiny bits—less expensive, tasty, and different. Finely crushed lemon drops inject a tangy flavor, too. If some dried fruits are not available, we can have fruit cake, even so, with the lowly oft-scorned applesauce pinch hitting for some of the fruity content. It won't make the mosaic type to which we have grown accustomed, but its honey fruit flavor is pleasing and you will find it delightfully moist.

Sweetening? No shortage there! And, should you know of some homemaker who has decided not to make fruit cake this year because of sugar rationing, do urge her to try honey for sweetening, stressing the elusive, exciting flavor fillip which the co-mingling of the natural sugar of honey and fruits never fails to produce. Point out the unusually good-keeping and improving - with - age qualities of honey sweetened fruit cake. This should prove a winning factor if she has a sweetheart, husband, or boy in camp or "somewhere out there." Honey fruit cake is sure to arrive a fresh, delightfully moist, and superlatively flavored confection, highly reminiscent of holiday cheer at home.

All along the line—preparing, baking, aging—it is the better part of wisdom not to hurry the process. The use of a food grinder does speed up the tedious task of preparing the fruits and nuts. However, that tempting mosaic appearance, so desirable when our cakes are sliced, is the reward of painstaking slicing and snipping. And, if you desire the utmost in flavor goodness, allow the finely cut fruits to stand overnight in the honey-spice-liquid mixture called for in the recipe you are using.

Delightfully moist, evenly cooked cakes are turned out when the batter is steamed for two-thirds of the cooking period, then finished off in a slow oven, 275 degrees F. If you have no steamer, use your canner or a boiler fitted with a rack. The carmelization point of honey is low, so if you prefer to bake the cakes throughout the entire period, baking pans or glass dishes should be well oiled and lined on the sides and bottom with heavy Manila paper to prevent carmelization of the fruits and honey. This paper should be greased or oiled before being fitted with a wax paper lining which should be oiled slightly. If white or light colored fruit cakes are baked, it is well to cover the tops

of the cakes with Manila paper until the last half hour of baking to protect the lovely fair complexion. Cakes are stored in these protective linings. If oven baking is chosen for cooking, it's a good idea to place a pan containing a pint of water on the bottom shelf of the oven during the baking process. The cakes will have greater volume, more moist texture and a smooth, shiny glaze.

To glaze or not to glaze! If you do, you may brush the batter with honey before baking; or after baking while the cakes are still warm. When cold store in air tight tin boxes or covered earthenware jars to mellow 3 to 4 weeks. Incidentally, coffee cans make ideal containers for baking and mailing.

Fair ones, dusky tones—take your choice, or make some of both and good luck to you!

Deluxe Honey Fruit Cake

One-half pound shortening, ½ cup brown sugar, 6 eggs, 1 cup honey, ½ cup strong coffee, ½ cup honey plum jelly, juice of 2 oranges, 1½ cups enriched flour, 1 teaspoon soda, ½ teaspoon salt, ½ pound citron, finely sliced, ½ pound figs, cut in small pieces, 1½ pounds currants, 2 pounds raisins, ½ teaspoon each of cinnamon, nutmeg and cloves, ½ cup flour (additional) for dredging the fruits, and ½ pound nutmeats.

Cream the shortening and add brown sugar gradually. Beat until light. Add beaten egg yolks and honey, then stir in coffee, jelly, and orange juice. Add flour, spices, soda, and salt sifted together. Mix well. Next add fruits dredged in the additional flour and the nut meats. Mix thoroughly. Fold in stiffly beaten egg whites. Fill prepared pans two-thirds full, adjust covers, and steam for 3 hours. Bake in slow oven, 275 degrees F., for 1 hour. Remove covers, allow to remain uncovered overnight.

White Honey Fruit Cake

One cup shortening, 1 cup honey, 5 eggs, 2 cups sifted flour, 1½ teaspoons baking powder, 1 teaspoon salt, ¼ pound citron, finely cut, ¼ pound candied lemon peel, finely cut, 1 cup pineapple tidbits, ¼ pound candied cherries, sliced in rings, ¼ pound pressed figs, coarsely cut, ¼ pound dried apricots, coarsely cut, ¼ pound dates, coarsely cut, ½ pound white raisins, 4 tablespoons unsweetened pineapple juice, ½ pound moist, shredded coconut, and 2 cups sliced, blanched almond meats.

Cream shortening and honey until light and fluffy. Add eggs, one at a time, beating well after each addition. Reserve ½ cup of flour for dredging fruits; add remaining flour, sifted with baking powder and salt, alternately with pineapple juice, beating well after each addition. Add dredged fruits, coconut, and nut meats, stirring only until well blended. Pour batter into prepared pan. Bake in slow oven, 275 degrees F., 1½ hours, placing pan of water on low rack of oven. Decorate top of cake as desired using citron, almonds, cherries, etc., brush with honey and continue baking for 1 hour.

Honey Fruit Cake

Four oz. candied orange peel, 4 oz. candied lemon peel, 8 oz. candied cherries, 4 oz. pecan meats, 4 oz. walnut meats, 4 oz. candied citron, 8 oz. candied pineapple, 8 oz. dates, 8 oz. seeded raisins, ¼ cup flour for dredging fruits, 1 cup shortening, 1 cup honey, 5 well beaten eggs, 1¾ cups sifted enriched flour, 1 teaspoon salt, 1 teaspoon baking powder, ½ teaspoon cloves, ½ teaspoon nutmeg, 1 teaspoon allspice, and ⅓ cup grape juice.

Shred orange and lemon peel, cut cherries into rings, sliver nut meats, cut citron, pineapple, and dates in small pieces. Dredge fruits in the ¼ cup of flour. Cream shortening with honey until light and fluffy. Add eggs and beat until smooth. Sift flour with dry ingredients and add alternately with grape juice. Beat thoroughly. Pour batter over the floured fruits and mix well. Pour batter into prepared pans, filling only two-thirds full. Steam for 3 hours, bake in slow oven 275 degrees F., for 1 hour.

Aunt Belle's Fruit Cake

One cup broken walnuts, 1 cup slivered almond meats, 1 pound raisins, 1 pound currants, 1 pound dates, seeded and chopped, 1 cup sliced candied orange peel, ¼ cup candied lemon peel, ¼ cup citron, finely sliced, ¼ pound candied cherries, 6 cups sifted flour, 2 teaspoons soda, 1 teaspoon salt, 2 teaspoons nutmeg, 1 teaspoon cloves, 2 teaspoons cinnamon, ½ teaspoon allspice, 3 eggs, 1 cup brown sugar, 1 cup honey, 1 cup melted butter, 1 cup any tart jelly, melted, and 1 cup sour milk.

Combine nutmeats and prepared fruits with the sifted flour, soda, salt, and spices. Blend beaten eggs and honey, add butter, jelly, and sour

(Continued on page 699)

Nosema Disease Contributes to Winter Losses and Queen Supersedure[1]

By C. L. Farrar
U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine

The Nosema disease of adult bees has been recognized by American beekeepers for 30 years. According to White (1919) the parasitic protozoan causing the disease was first studied by Donhoff in 1857, but it was apparently forgotten until Zander (1909) revived interest and named the organism **Nosema apis.**

European workers have attached far more importance to Nosema than have American beekeepers. Except for White's (1919) contribution to our knowledge, the disease has received little serious attention in this country. Like sacbrood, it has been accepted as a troublesome disease of minor importance, minimized by good beekeeping practice.

Workers in the laboratories of the Division of Bee Culture have been aware that Nosema was present at times in their experimental colonies, but they have been without means of measuring its importance. The characteristics shown by severe cases of Nosema which developed under greenhouse conditions in colonies used for feeding tests with pollen and supplements precipitated the extension of observations for Nosema in the apiary. Nosema was found to contribute substantially to both winter losses and queen supersedure. The winter losses pertained principally to weakened colonies rather than to those that died. Probably Nosema is neither a new nor a local problem. Many cases of both poor wintering and queen supersedure have lacked a logical explanation.

The literature on Nosema presents many conflicting views relative to the season of occurrence, manner of spread, effect on brood rearing, and the length of life of infected bees. Because of this situation the present discussion will be limited to recent observations at the North Central States Laboratory at Madison, Wisconsin.

Bees infected with Nosema have been observed in normal colonies every month in the year. The infection is usually most serious from February until May or June. During the winter months infected bees are more likely to be taken from the cluster before than after a flight. Colonies placed in small compartments in a greenhouse on November 20 developed serious infection within six weeks. Of the dead bees picked up from snow in two yards during February, 27 and 36 percent were infected.

The relation between Nosema infection and colony strength is shown in Table 1. Samples of from 5 to 12 bees were taken from the top of the clusters for examination during February and March. To indicate colony strength the number of combs covered by the clusters was estimated between March 20 and 25, when the temperature was approximately 35° F.

The percentage of infected colonies was definitely greater in the weaker colonies. There is no indication that the small samples gave a complete picture of the incidence of Nosema, since additional samples taken late in March from suspicious colonies that showed negative in February or early March were found to be infected. It is possible that all colonies contain some infected bees, but that the loss is greater in small colonies and that the disease spreads more rapidly in them. Colonies showing infection in 50 to 100 per cent of the samples were weak and showed strong evidence of dysentery. There is no relation between Nosema infection and distention of the hind gut. Nosema appears to be a major factor in winter dysentery, if not a primary cause. The relation between Nosema and dysentery should be investigated further.

Several conditions were responsible for colonies lost or weak in bees, although not infected with Nosema. Two good colonies starved with honey in the hive but out of reach of the clusters; the clusters were held to their position by three to four frames of brood, the brood being below the honey in one colony and above and to one side in the other. Three colonies were queenless and one contained a drone-laying queen. Honey

1 A contribution from the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, in cooperation with the University of Wisconsin.

TABLE 1.—NOSEMA INFECTION AS RELATED TO COLONY STRENGTH.

Yard	Condition of Colonies	Frequency Distribution showing Number of Infected and Uninfected Colonies Classified according to Number of Combs Covered by Cluster									Per cent of colonies Infected
		Dead	1	2	3-4	5-6	7-9	10-12	15-20	Total	
A	Uninfected					7	16	4	2	29	
	Infected				4	1	2	1		8	21.6
B	Uninfected				4	8	13	8	2	35	
	Infected				1					1	2.8
C	Uninfected	3			2	5	6	4	1	21	
	Infected	2	2			1				5	19.2
D	Uninfected		2	1	4	7	2			16	
	Infected	1	1		1					3	15.8
E	Uninfected	1			2	4	9	7	4	27	
	Infected				2	1				3	10.0
F	Uninfected				2	1	3	4	2	12	
	Infected									0	0.0
G	Uninfected						1	7	2	10	
	Infected									0	0.0
H	Uninfected					2	1	10	1	14	
	Infected		2	2	3			2	1	10	41.7
Total Uninfected		4	2	1	14	34	51	44	14	164	
Total Infected		3	5	2	11	3	2	3	1	30	15.5
Percent Infected		42.9	71.4	66.7	44.0	8.1	3.8	6.4	6.7		

was stolen from two colonies by pilferers. A few colonies had populations below normal in the fall owing either to poor stock or to late queen supersedure.

From 800 to 1,000 bees in cages were inoculated with 5 ventriculi from diseased bees added to sugar syrup. These bees showed 100 per cent infection within five days, when small samples were examined, and practically all the bees died within two weeks. Duplicate cages of uninoculated bees showed very light infection which approached 100 per cent two weeks later than in the inoculated cages. The peak in the mortality curves occurred approximately two weeks later in the check cages and the maximum length of life was twice as great. Both the infection rate and the mortality curves were similar in the duplicate cages containing bees from two colonies. Badly infected bees can be recognized by the appearance of the ventriculus and the milky-white condition of a water smear. In the early stages infection diagnosis under a microscope is necessary.

Thirty colonies used in the greenhouse for experimental feeding of pollen and pollen supplements all showed Nosema. Each experimental colony was established with 4 pounds of bees (approximately 14,000). Under the most favorable food conditions a colony reared up to 9,300 bees, but there probably were not more than 3,000 to 6,000 bees at the close of the tests. Brood-rearing decreased rapidly as the infection built up and practically ceased after six to eight weeks. The queens all continued laying throughout the 90-day test period. Nosema is apparently more serious under the close confinement of colonies in the greenhouse than in normal colonies wintered out of doors.

The majority of package colonies established April 24, 1940, produced small amounts of brood of poor quality during the second 12-day period after installation; yet the population, food, and weather were exceptionally favorable. The similarity of the brood nests to those of Nosema-infected colonies under greenhouse conditions is circumstantial evidence that Nosema probably was a limiting factor. The amount of sealed brood in the third 12-day period more than tripled that in the second, and the quality became normal.

There are also indications that Nosema infection has some effects on queen supersedure. Three queens that stopped laying in 1941 were found heavily infected with Nosema spores. Queens that have been superseded often cannot be found for examination, but according to the records for colonies in which supersedure occurred, the behavior of the queens, the break in brood-rearing, and subsequent supersedure are similar to the records

(Continued on page 701))

A Note on Housed Bees

By Leo T. Murray

At the present time many persons living in urban and suburban locations are considering keeping a few hives of bees to help out with the sugar shortage next year. If they have kept back-yard bees before, they know that no magic is involved. In many locations bees cannot make enough honey to pay their own way. It is essential that bees have access to bee pasturage. My experience with this problem may be of interest to some of these prospective victory beekeepers.

Six years ago I started with two hives of bees in the back yard. That first year they made no surplus and the following spring I had to feed sugar syrup. This experience was repeated with minor variations for three years. I then placed the bees on a farm. Each hive made about 50 pounds of honey that season but the distance to the farm was so great that neglect of the bees was unavoidable. I tried unsuccessfully to locate a site nearer home. Very reluctantly, I was considering giving up beekeeping when a last resort occurred to me.

I have access to a boat house on a local lake. The hives could be placed there but they would almost certainly be stolen unless some means could be found to prevent their theft. The best solution to this problem seemed to be to put them inside the boat house. It is locked at all times. Some hasty reading on the subject of keeping bees inside a house rather discouraged the idea but it was my only chance to continue with bees. Hence, last year my apiary, which had now grown to four hives, was moved into this boat house just before our first honey flow in June.

Preparations had been made for the bees by boring a series of half inch holes in the wall opposite each hive site. A landing board of rough packing case lumber was nailed to the wall outside and just below each series of openings. It had been planned to set the hives on the floor but a few days before they were placed in the house high water reached a depth of a few inches inside the house. To prevent suffocation of the bees under such conditions some old tables were placed along the walls and the hives were set on them. It is unlikely that water will ever be high enough to reach them there.

It seemed fairly certain that the bees would not suffer in this enclosed place during the cooler months of the year but I was apprehensive of the long hot summer days. This boat house is exposed to the sun and the temperatures are sometimes above 100 degrees F. during the summer. The rough construction of the house leaves many cracks between boards but there are no windows and no ventilators in it. In order to give the bees every possible chance to survive, the hives were arranged to give all the circulation possible under the circumstances. The outer hive covers are left off during the summer and the opening of the inner cover is covered with screen. This provides for a draft through the hive from bottom to top, chimney fashion. A little smoke blown into the bottom soon comes out through the hole in the inner cover, indicating that the hive actually draws. I examined each hive each week throughout the first season, half expecting to find melted combs each time. Now, after two summers, I am convinced that the temperature inside these housed hives is lower than inside an outdoor hive in this region in summer. No damage to the combs and no serious discomfort to the bees has been noted.

The hives are prepared for winter by closing the opening in the inner cover, replacing the outer cover, and putting in the entrance reducer. No packing is needed, even outside, in this region.

All this may be interesting to a hobbyist but a serious minded beekeeper wants to know how the yield is affected. The first season my two best hives averaged approximately 100 pounds each. That is at least twice the average production of bees kept in the open in the immediate locality. This season has been equally as good and again my housed bees have about doubled open yard bees in the same region. I can offer no explanation for this at this time. My housed bees build up a little faster in the spring but our first honey flow is so late that should make little difference. Some flowering plants

(Continued on page 700)

The South is a Bonny Land

By Grant D. Morse

On a recent 3,000-mile trip into the South and back again, my attention was drawn at intervals to the subject of beekeeping.

Probably no two of us see the same things or have the same thoughts on such a trip. One fact I observed in particular: relatively few bee hives were to be seen as one drove along. The traveler sees many fine houses and barns; thousands of cattle; grain fields; hay fields; acres of cotton, tobacco, and vegetables; orchards of citrus fruits, lovely to behold to the eye of a Northerner; forests of yellow pine yielding pulp for paper, sap for turpentine, logs for lumber; palms; and many other attractions, but relatively few bee hives. I don't mean that they are not there. But by comparison with the number there, few are visible. This is true of every land and every section. I mention it because I'm wondering if perhaps the hive, next to honey itself, is not the best advertisement the beekeeper has for the sweet he has to sell.

The traveler has a chance to talk about honey with other people in a way that is impossible at home. This is because at home he is known to be interested in honey and hence what he says or asks about it there is interpreted naturally as being prejudiced. But away from home it's different. For example, in restaurants I could ask if I might have honey with my meal. In some restaurants it was available, but in a surprisingly large number none was in stock. Of course, this is not an unusual condition with other communities either. I know that here in my own community one can seldom buy Hudson River Valley apples. These apples are coveted in the markets of New York and other cities, but here at home they are not usually available. One reason for this appears to be that in too many instances the home folks of a community are not willing to pay the price for a first grade commodity. Instead they will purchase an inferior commodity that has been imported from another part of the country. This tends to depress the price of a first quality article, or else to drive it off the market entirely. In much the same fashion I was interested to find in one part of Florida no orange juice was available. Some of the stands at which I asked for it were less than a mile from a great orange juice cannery, and these stands carried many different attractively bottled fruit juices including pineapple juice and tomato juice, but no orange juice.

I was interested in the ideas the average non-beekeeper has about honey. I was impressed with what I believe to be the correctness of his attitude toward honey as a staple food commodity. Several with whom I talked expressed the feeling that the honey they purchase, or could purchase, varies too much. That is, a honey, labeled, for example as orange blossom honey, may be one thing at one stand and quite another article of food at another stand. Here again, let me say, this is not true of southern honey alone. It is too often true of any honey the layman buys. Seldom does he find it twice alike. Many of our shrewder packagers have long since sensed this and are now making available to the public a uniformly packaged honey labeled with a consistency upon which the purchaser may depend. My criticism of the honey put out by the average packager is that it isn't the honey most of us honey producers would eat. It's too thin and syrupy. Most of us like a honey of distinctive flavor, thick bodied—perhaps even crystallized.

The terminology used by people about bees and beekeeping always intrigues me. One woman at a stand said, in answer to my query regarding the crop yielded by their bees, "We rob them only in May." Perhaps that is the way most women look upon the practice of beekeepers in taking the surplus. Maybe some of us take more than the surplus. Perhaps we do rob them.

One comes home from such a trip as I took better able, I trust, to see his own locality and his own problems in their true light. I must confess I envy a bit my southern beekeeping friends their splendidly warm climate as I sit now in my study and look out upon white-clad fields. [This article was written in January, 1941.—Ed.] Lingering still in my memory is the sight seen four days ago of bees alighting on the entrance board laden with pollen.

Saugerties, New York.

Bricks Without Straw

By H. H. Root

Honey and wax producers are expected to produce in 1943, 50,000,000 more pounds of honey and one to two million more pounds of beeswax. This request on the part of the Department of Agriculture is sincere. Honey is an important food in this day of sugar rationing, and beeswax has long been a critical war product, thousands of tons being needed by the Army and Navy.

With no resentment at the request and with a solemn determination to make good, the producers of the country nevertheless are in a quandary. They are giving their sons and helpers for service in the armed forces; in some instances, the producers themselves, with hundreds of colonies of bees, are hastily turning them over to some one else, and submitting to the draft, so great is the demand for men.

This shortage of experienced men puts a heavy load on the older producers or on new beekeepers suddenly faced with the necessity of acquiring experience rapidly in order to make good.

This great burden would not be so grevious if the needed equipment were available. Ordinarily, expansion requires added equipment. Bees and beekeepers are willing to work while it is light but with the dire shortage of help, labor-saving equipment is vitally necessary. Unfortunately, much of the equipment so badly needed, such as power honey extractors, power uncapping machines, larger tanks, etc., must be made of steel.

As we go to press, the War Production Board has just made public the new limitation order, L-170, that will govern the production of all farm equipment for the coming year. While the quotas vary with the farm equipment articles,in general the production is reduced to around 25% of the 1941 production. Bee hives and other bee supply equipment are included under the order and it was first hoped that lumber used in the construction of bee hives would not be included in figuring production underthe quota but a last minute change of heart restricts all hives and parts to 57% of the 1940 or 1941 production and all other bee supplies to 38% of the same years. While the quota of 57% is, no doubt, liberal as compared with most other items of farm equipment under the order it will be a serious blow to the expansion of the industry.

The plight of the honey and beeswax producers is really worse than that of the Israelites of old, who were told by the Egyptians that in the future they would have to make bricks without straw. The honey and wax producers are asked to produce more honey, more beeswax, with much of their help unavailable and with considerably less additional labor-saving equipment.

The crisis facing this country as a whole is serious. Mistakes cannot possibly be avoided. There is much to be done and not time enough in which to do it,—too much to make of steel and not enough steel to go around. However, it seems increasingly evident that somewhere along the line, someone is not placing the proper stress upon the importance of food. Most wars have been lost by reason of food shortage. Hungry men cannot fight nor defend their homes. Someone has overlooked the fact that soil will wear out. Nitrates are unavailable for the duration; commercial fertilizers of all kinds are hard to get. The legume is the one hope of the American farmer, for the legume restores nitrogen to the soil, and rebuilds it to its former fertile state. The legume is the natural soil restorer.

In order to have more seed for the coming crops of legumes bees are needed in added numbers. He who may laugh off the question by reasoning that we can get along without honey on our waffles, is not answering the question where the needed beeswax is to come from if there cannot be additional crops of honey. He is forgetting the absolute necessity of millions of bees to pollinate legumes, to pollinate fruit blossoms in order that nature's necessary balance may be preserved.

The beekeeper owes it to his country and to himself to make sure that his own Congressmen understand that his plea is not a selfish one but a patriotic one. Fruit growers and farmers need the bees; the beekeepers need the equipment.

First Impressions of a Bee Meeting

By Amy Leno

I attended my first bee meeting on August 22, 1942, held at the lovely home of F. D. Manchester at Cornwall, Vermont I'm not a beekeeper, but live with a bigamist whose other wife is his small apiary. We read and talk over many bee books and magazines and for these reasons I can at least understand the language of beekeepers.

It is eighty miles from home to Middlebury and for a week we made plans for the trip and picnic with our seventy-seven year old beekeeping friend, Charles Crofut. I was as enthusiastic as the beemen themselves, but upon arriving at a strange farm, populated by strangers who I'm sure know more about bees than I could learn if I lived forever, I couldn't help hearing a little voice say, "Maybe, you just came along for the ride, Amy." There was no time to let that voice bother me. We weren't out of the car before the friendly Charles Mraz spotted Mr. Crofut and introduced us to everyone.

I was more than pleased to meet the two Misters LaBombard of Vergennes. I had heard much of their dog-house apiary and the meeting held there two years ago: The younger man quietly told us that a new city ordinance had forced them to move their three-hundred-colony apiary outside the city limits. Quietly again, he said he didn't care to repeat the job. All so calm, for a few wild moments I thought perhaps my new friends were super men. Then his father broke the spell with some mild profanity which more aptly described the move.

Desperately I tried to pick a side in the debate between comb honey producers and extracted honey producers. One, "has to scrape all those boxes". The other, "has such a sticky mess." Of course, each admitted good points of the other's methods, but ! ! ! ! The debate was strictly informal, just bits of conversation picked up among the various groups. Nevertheless, the debate was always present as it was in the question of large apiaries in one place vs. apiaries with several outyards.

As soon as we were nicely acquainted, Mr. Manchester's son took us to see their new honey house. Ignorant as I am, I wouldn't attempt to explain how everything works, but even I could see it is provided with every convenience for the Manchesters' needs. Young Manchester effervesced pride all over the place as he switched on this or that gadget or pointed out an improvement of method here and there.

Later in the day while enjoying the demonstration of extracting given by the young man who is Mr. Manchester's assistant, I could definitely understand the value of the electric fan cooling system in the extracting room. Standing in that quiet honey house, where the heat is heady with odor of honey and beeswax, one forgets the world and its troubles outside.

The guest speaker was Dr. Thomas, president of Norwich University. His beekeeping began when he was at the age of thirteen. His father presented him with thirteen colonies of bees. The bees paid his way through Middlebury College. Each Friday, his father rowed across Lake Champlain from Fort Henry to get him.

Dr. Thomas' mother found it difficult to get the wax out of his clothes, so when working around the bees he wore his father's old trousers held up by suspenders. They were much too large at the waist. One day he climbed the highest ladder with an old pan to shake down a swarm of bees. Some of the bees went into the pan, he said, but most of them went down into his trousers. It was a very long trip down the ladder and to the hive, but he made it.

I happened to hear eighty-four-year-old-timer George Spencer assert that his rheumatism, which is very bad during the winter, doesn't bother at all when he can be around his bees. He takes care of ninety colonies with no help.

After lunch we went to Mr. Mraz' extracting room in Middlebury. His demonstration was equally as interesting as the one we witnessed at Mr. Manchester's. His method of uncapping reminded me just a little of the French Revolution: a cold knife, but oh, so sharp ! !

Now as I look back on my first impressions I can honestly say, "I didn't go along just for the ride". From now on, whenever I have a chance to attend a bee meeting, I'll be there.

Arlington, Vermont.

From the Field of Experience

A VICTORY HONEY STAND
By Harry Coverstone

The V-for-Victory honey stands of which we built two at a cost of $4.50 have not only caused a sensation on our spacious lawn, but have paid for themselves many times over during the first two weeks after their construction.

Each V is painted red, white and blue with bracketed shelves for 1 and 2 lb. jars. A flower pot stand is bracketed to the rear of the V.

One Sunday afternoon we nearly caused a traffic jam because of the cars that had stopped to buy honey and others who drove slowly and just looked to see what was going on. There is one stand on each side of the lawn in the shade of maple trees.

Our place is three miles south of Kalamazoo. There are a dozen resort lakes within five miles of us crowded with tourists, this in addition to the city population.

Part of our home apiary can be seen through the V of the honey stand, also a corner of the honey house at the rear of our home.

All our honey is heated in 60's and packed in 1, 2, and 5 pound glass.

Our only regret this year is there won't be enough honey to go around as we are about sold out at this early date. (September 9, 1942).

Detroit, Michigan.

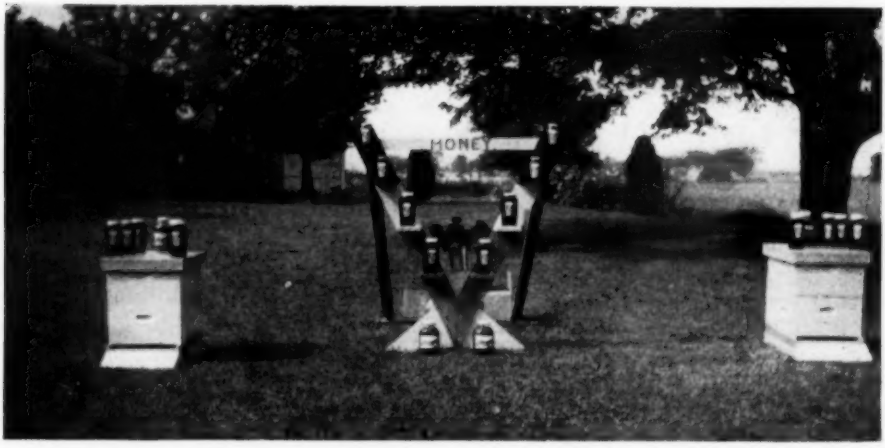
PATENT HIVES ONE HUNDRED YEARS AGO
By C. H. Gilbert

While browsing through old copies of bee journals, the reader is amazed at the number of devices that have been developed and used in the manipulation of bees and the production of honey.

Beekeepers are an ingenious lot and are constantly experimenting with new ideas. The present-day apiculturist may get the idea that modern methods and equipment are the results of comparatively recent research, and that methods of 100 years ago were very crude. That was my impression and I got a surprise when I found the following newspaper article published in July, 1841:

"The Bee Business"

"Mr. Rice of Ripley, Erie County, Pa. has an extensive establishment for keeping bees. Twenty years ago he had one swarm—from which in 12 years he had 396 swarms. The Erie Gazette states that they had then become so powerful that they commenced depredations on neighboring tribes, going out on predatory excursions to the distance of 2 or 3 miles, much to the annoyance of the unfortunate neighbors. He then killed off a number of swarms, and obtained over two tons of honey for the New York market. He has now



The Victory sign attracts attention. One sign on each side of the lawn is seen by motorists going in both directions.

adopted the patent hives for a part of his bees, in which small glass drawers are placed in the upper part, with small apertures for access from the main part of the hive. In this way, by drawing the slide the bees can be seen at work, and the amount of honey ascertained. When filled, the drawer can be removed, and the place supplied by another, without destroying the industrious insects."

Laramie, Wyoming.

• • •

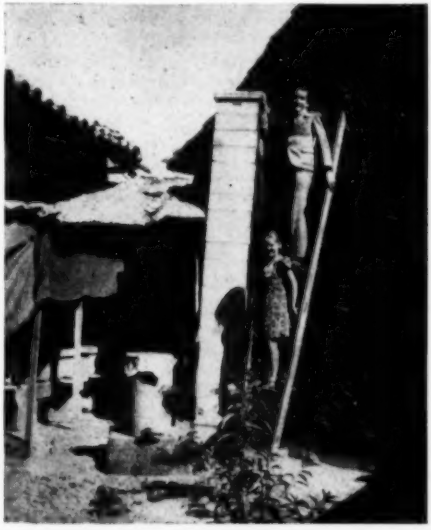
BOLIVIA BEEKEEPER GETS A BIG CROP

By L. M. Shedd

[This article was written July 7, 1942. —Ed.]

The accompanying picture shows a hive we built to represent the amount of honey brought in by one colony of bees from Sept., 1941, to the end of April, 1942. The total was 580 pounds. After bringing in over 400 pounds it swarmed. The bees lighted on a Norway Spruce right out in the plazuela just over our wall. The story of catching the swarm is a separate one, and I will not try to tell it. We took the mother colony away from its stand and used it for forming nucs,* so that the 580 pounds is from one colony and one queen. Jacob accused his Uncle Laban of changing his wages ten times. If these bees only knew it we changed theirs about twelve.

* Nuclei—Small colonies.



Beekeeping in Bolivia is profitable.

A sister hive about eight inches to the right of the champion delivered us over 550 pounds. From the seven colonies we took off just under 2,800 pounds, and over 60 pounds of wax.

The little yard, which in Bolivia is called a "patio", obliged us to manage everything under cramped conditions. The hives are only a few inches apart. We extracted our honey in the bed room. Practically all the operations with the hives have to be done standing in front.

The production of two of the colonies was greatly reduced because of the formation of one dozen three-frame nucs, which have been well scattered over Bolivia—one being sent by plane to a place near the border of Brazil. Several others here have been made happy with a real and lucrative hobby.

The meliferous plants from which the nectar was brought are as follows: Peach, eucalyptus, alfalfa and mustard. These four months from the first of May to the first of September are non-productive. They find plenty of pollen and some honey. Many of them visit the tables where women sell fresh drinks in the open air. Many of them are drowned. Of course, this only goes on until the flowers bloom again. There are some flowers blooming, but there would seem to be very little nectar. Two or three of the queens stopped laying entirely for some five or six weeks. Others have been laying in as many as five frames right through. Several nights the thermometer registered below freezing. Practically all the queens are now starting to build up for the peach bloom on the first of September. They seem to get just enough nectar so that they do not use their few pounds of stores.

The sale of honey has been very good. We have sold at not less than Bs 5.00 (pesos) to the pound. In some parts of Bolivia honey is being imported from Argentina.

Interest in apiculture is increasing by leaps and bounds. I cannot supply the demand for nucs that come in unsolicited.

Our success this year is phenomenal as we know of no one in the Republic who has come anywhere near this record. Lest this should seem like boasting, we like to credit our Heavenly Father above who has blessed us especially in these sad times.

Cliza, Bolivia.

HIGH HUMIDITY INCREASES MOISTURE CONTENT OF HONEY

By W. A. Stephen

Assistant (Apiary Products) Department of Agriculture, Ottawa, Canada.

In the August, 1942, issue of Gleanings appeared an article by the writer entitled, "Removal of Moisture from Honey in the Comb". In this it was pointed out that honey would lose moisture quite readily to warm air passing over the combs. That honey will also take moisture from the air is a recognized fact, and it has been demonstrated particularly well at the Bee Division recently.

Two samples of honey from different apiaries, several miles apart, in the vicinity of Ottawa, were brought in for testing. The moisture content was 16.7 and 16.6 per cent respectively. A week or so later more honey was extracted, at the same apiaries. This honey was essentially the same as the first, all the surplus being removed from each colony at one time. Samples of both the second batches of honey gave readings of 17.4 per cent moisture.

The reason for this increase in moisture content is found in the relative humidity records for the period just prior to the time of extracting. The second lot of honey was extracted on August 14th. On August 9th to 11th the humidity averaged 96.8 per cent with a temperature ranging from 56 to 68, the average being 61.2° F. During much of this period rain was falling and the relative humidity continued at a fairly high point during the intervening period till the 14th.

The weather around Ottawa during June and July had been quite dry, and during the nectar-gathering period little rain fell. During July there was only 2.31 inches of rain compared with a normal of 3.75 inches. The bees were able to ripen the honey well under these conditions and because the nectar flow shut off rather abruptly about the end of the third week in July there was uncapped honey in the supers, but not more than in those usually taken for extracting.

The rapidity with which honey in the comb will lose or absorb moisture has not been apparent to the average beekeeper, and it is only under such circumstances as are mentioned here, when beekeepers inquire the reason, that they recognize the importance of the relationship between humidity and the moisture content of honey.

Under normal conditions purchasers of honey are not much concerned about the moisture content of the honey, but with sugar rationing many people are buying their year's supply now, and they are particularly concerned about how the honey will keep in storage.

Records being prepared for publication at the Bee Division show that there is a greater percentage increase in fermentation of honey in the region 17.0 to 17.4 per cent moisture than in any other region, over 47 per cent of the samples containing 17.4 per cent moisture fermenting within a year's time. Hence the justifiable concern over an increase of 0.7 or 0.8 per cent of moisture. Had the honey had an original moisture content of 17.4 per cent a similar increase would have given a second grade product.

If beekeepers were fully aware of the effect of humidity on the moisture content of honey they could time their extracting to take advantage of dry periods. When no such periods occur it will be necessary to resort to artificially removing the moisture in order to produce the best honey.

• • •

A HAT WITH A HISTORY

By E. R. Root

Rummaging among some old pictures I ran across one that brought back vivid memories of an event that occurred some twenty-five years ago. It proves pretty conclusively that even the gentlest of Italians under certain provocations can sting, and sting viciously.

It so happened that I had been away on a trip. In the mean time a neighbor who had a cornfield near one of our outyards complained that the bees were stinging his horses and he demanded that we move the bees. As I was away one of our apiarists with less experience than he should have had moved the yard only a thousand feet, right in the midst of a honey flow and in broad daylight. Old veterans would know that this would be an awful mistake—awful in the real sense of the word. However, he put back three hives on the old location near the cornfield to catch the returning bees. When I heard what he had done I knew at once that there would be more trouble in store for the owner of the

cornfield and his horses. So I went down that night and found the three hives left near the field, each covered with a mountain of bees. I put the three hives in the back of the auto, scooped up the bees on the outside with a shingle, after smoking them vigorously, and put them in the back of the machine. I scooped up all of the bees and killed the remaining ones because I knew they would make trouble for the horses cultivating the field the next day.

Did I get stung in moving the hives to the machine? Look at the hat! It proves that I got plenty of stings. My coat and trousers had so many stings that there was not a space on the garments where the tip of the finger could be placed without touching a sting. The felt hat tells its own story.

Well, it appears that the bees when they found their hives were gone were in a bad state of temper. I arrived at a time when they were the maddest. I took the stings (rheumatic cure we liked to call it) with no bad results. Of course I wore gloves and a bee veil and had a smoker but that did not prevent the stings from going through the clothing. I received enough bee sting poison that night to keep me immune against rheumatism or neuritis for all time to come.

When I finally got the bees in the machine I drove to an outyard three miles away, dumped some bees in front of each of the entrances of a dozen strong colonies, smoking the entrances and the bees before doing so. I ran the risk of killing the queens in the colonies but apparently no harm was done.

Moral—don't move bees in the midst of a honey flow in the middle of the day. Wait until after dark,—load the hives and all on a truck and carry them at least two miles, or better still, three miles. Our employee, in this instance, made the mistake of moving the bees only a thousand feet away, thinking that the three hives left at the old location would catch the returning bees. They did. They were all fielders loaded with honey and when they found their home was gone, they were in a mood to wreak vengeance upon the first man or beast that came along. As it was, I went down again the next morning early, killed all the bees that were clustering around the old apiary spot and thus avoided a law suit with that neighbor.

Beginners in beekeeping better paste this little story with the picture in their hat before their hats get a like treatment.

Says Josh Billings: "Experience is a good school but the tuition is high."

• • •

IN EVERY THANKSGIVING BASKET!

By C. M. Litteljohn

The Thanksgiving Basket is not complete without that jar of honey on top—that special jar dedicated to a better Thanksgiving, for Thanksgiving is a day for the proverbial prodigal feast, the occasion for good cheer and good eating, in which honey has a firm and even exalted place.

Now almost upon us is that gay and thankful season of the year which can be made to mean more to the honeyman by reason of Thanksgiving Baskets for friend or relative, for poor and needy, or just plain gift of goodwillwhich has for its top-piece or centerpiece the amber

When bees are moved in the midst of a honey flow this is the way they respond. They do not like to have their work interrupted.

delicacy which in itself is justifiable cause for Thanksgiving.

America's most distinctive contribution to the world in the way of holidays—its own great eating festival—can be rendered more significant and enjoyable if there is a pot of honey in every Thanksgiving Basket, or a jar upon every groaning board that creaks with the weight of the Pilgrim's bird and all the fixings.

Business for the honeyman, moreover, may be an occasion of real Thanksgiving through concentration on this outlet during November—the month in which comes National Honey Week, in addition to that great eating festival in which honey goes to the head of the table in so many homes.

November, therefore, is the month in which greatest stress and emphasis may be placed on honey—more than in any other month of the year—for neither the Thanksgiving Basket nor Thanksgiving itself is complete without honey.

Putting the jar of honey in every Thanksgiving Basket for the greatest November day will cause the bee man to reap more than his fair share of the golden harvest, a share furthermore, that will grow with the years, for it will mean the honeyman's more profitable participation in this day of grace.

Seattle, Wash.

• • •

MELTING UP BURR COMB AND BITS OF WAX

When melting up bits of burr comb, small particles of cappings, etc., use preferably an enamelled pan or kettle.

Put about an inch of water in the bottom and acidulate it with a tablespoonful of vinegar, especially if the water contains soda. This prevents a layer of mushy looking substance between the water and the wax which is really the result of partial saponification of the wax by the hard water.

Add the wax but do not allow the water to reach the boiling point. Wax melts about 140 degrees F. so do not bring the temperature any higher than necessary, for the hotter the wax the more danger of discoloration.

When the wax has all been added, remove the kettle from the stove and cover it up to keep the wax warm as long as possible. This will facilitate the settling of impurities into the water underneath. When cold, the cake of wax may be removed,—a little scraping at the bottom is all that is needed.

Be careful never to leave the wax on the stove. It may get too hot, boil over and cause a disastrous fire.

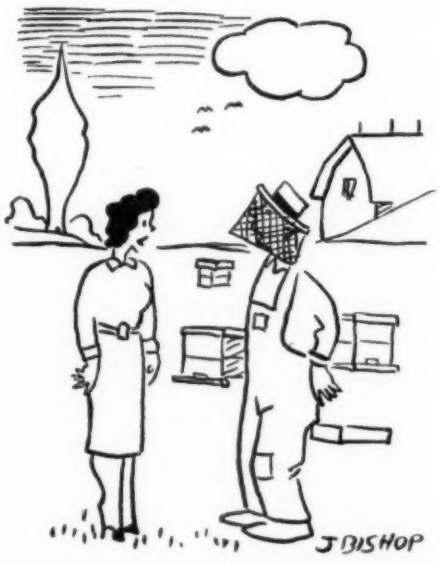
• • •

SCALE HIVE OBSERVATIONS

By Jack Deyell

There is something intriguingabout watching a hive of bees on a scale. This past season the records kept daily and tabulated on the record card have been dull, however, due to the poor season. On Oct. 1 nectar from aster came in quite well. At 7:30 A. M., before any bees flew out, the weight stood at 134 lbs., at 1 P.M. the weight showed 130 lbs. and apparently about four pounds of bees had left the hive for the fields. The weight at 2 P. M. was 130½ lbs. at 3:15 P. M. the hive had advanced to 132½, a gain of two pounds in a little over an hour. At 4:15 P. M. the hive weighed 134½ lbs., and at 7 P.M. the weight had gone up to 138 lbs. The next morning at 7:30 the weight had dropped back to 136½ lbs. showing a loss of 1½ lbs. during the night, due to evaporation of moisture from nectar. This made a net gain of 2½ lbs. in 24 hours, which isn't so bad for October.

• • •



"Did them bees go where you told them to? I smell something burning."

SECOND GLANCES
By C. M. Isaacson

That honeybee head adorning (?) the October cover of Gleanings rather reminds one of a bad nightmare at first sight. It decidedly needs a "second glance" to see that it is an exceptional photograph and striking in its detail.

The information given in Mr. Walton's paper (page 585) may be "old stuff", as he puts it, but they are facts worth repeating. One point to remember is that the 5 per cent of "miscellaneous constituents" in honey are what makes it a unique product, different from any manufactured syrup. We should take every care not to injure any of them by improper processing. And that honey is in reality a fairly acid food should be kept in mind while using it in cooking. The list of references given at the close of the article should be of value to any engaged in research on this subject.

John Leake's article (page 591) may be of considerable interest to those who feed sugar syrup as a regular practice. That thymol prevents yeast or mold development should make it possible to prepare syrup safely in advance of actual need if desired.

Several logical reasons are advanced by E. H. Wirth in favor of the reversing of hive bodies to prevent swarming (page 592). Locality and even different strains of bees may influence the success or failure of this method. Here, I usually find it of only temporary value, depending more on Demareeing as the main control when needed. Under many conditions, reversing may be of value, tho, and should be worthy of trial.

Relative to the two-queen system, a statement by a certain apiarist several years ago comes to mind—that it is not always the amount of honey produced that makes a successful season but the crop in relation to labor. Mr. Tontz shows that the labor problem with this method is a real one; may work against its widespread use (page 594). Incidentally, those single-queen colonies shown in the snapshot are "backbreakers" enough (mine creaks at the sight of them).

Saskatchewan evidently has some remarkable beekeeping locations, and Percy Wright shows that he knows the "how" of having his bees **ready** for the flows—that to get a real surplus of honey means leaving a like surplus for the bees the season preceding (page 598). But just how does he manage to cellar colonies three stories high? It must take a real feat of strength to get them down and up.

"A half way beekeeper" is quite an apt expression (page 600). While not all of us have the ability to successfully retail our crop, we **are** going only half way if we fail to do something that will assist its eventual sale; some form of advertising, even tho it may be "talking" honey whenever the chance arises.

That item on better pictures should be kept in mind as we go through the active seasons ahead (page 601). Pictures are an indelible record of the past—and a very interesting one in after years. We **should** be more picture conscious.

Mr. Baumgarner wants no top entrance in his winter pack but does provide for upward ventilation. If he were located farther north where snow and ice are more likely to clog the regular entrance for long periods, he would probably adopt an upper opening—and would find it fills both needs (602).

Starting on page 605, the editorials contain much of value. We **should** keep an open mind on wintering, and all other beekeeping problems. While we learn much from earlier beekeepers, in the words of one of our poets, "new occasions teach new duties". And that intelligent beginners should be encouraged certainly should be evident to all thinking persons. We do need both more bees and beekeepers.

I believe that we all will echo the sentiment in H. M. Myer's report (page 613); that our next honey crop may be sold in a time of peace. Our present high prices do not bring satisfaction to the thoughtful beekeeper—better far a lower one if need be, and the real blessings of a country (and world) free from the terribleness of war.

Have you seen the new "vest pocket size" recipe book released by the American Honey Institute? It packs a lot in a small space. The new five pound pail leaflet is very attractively put up also. Ask for copies. And don't forget, to continue its good work, the Institute needs our contributions.

Middle River, Minnesota.

Editorials

Be sure to read the two articles on beeswax production on pages 656 and 664.

• • •

"Factors Affecting the Usefulness of Honey Bees" is the title of an excellent Circular, No. 650, by the Bureau of Entomology, Department of Agriculture, which has come just as we go to press. It is very timely coming as it does with the authority of the Department. We will have a review in next issue.

• • •

The picture on the front cover of this issue was taken in September, 1941, a few miles from Medina. This swarm did not get established early enough in the season to store a sufficient amount of honey for winter.

• • •

Upper entrances for localities where there is much moisture have apparently come to stay. A poll of recent field meets seems to show that they are fast coming into practice. Langstroth was the first to see their value and now we belatedly are coming to his viewpoint. This is not the first time the father of American beekeeping has pointed out the way to better beekeeping.

• • •

We can't control the weather and perhaps it is a good thing we can't. And yet, beekeepers must have favorable weather conditions to secure a good honey crop. We may have good bees, populous colonies, good equipment, a good location, and intelligent apiary management, but if we do not have favorable weather for nectar secretion and normal bee flight during the time the crop is ordinarily harvested we do not secure a normal crop of honey. The crop failure this year in parts of the clover region was due largely to erratic weather. Let us hope that Nature may be kinder to us in 1943.

• • •

A cellar is an ideal place for wintering bees in the far north **provided** temperature (45° to 50° F.) and ventilation can be kept under control. On the other hand, an ordinary house cellar where there is a furnace, with a temperature ranging from near freezing to 70° F., is about the poorest place to winter bees. A house cellar with a fruit compartment that is dark and has an even temperature below 50° F. may be used for a few colonies. Unless the average temperature outdoors plays around zero with no flight days, bees had better be wintered outdoors with outside packing. An ideal bee cellar especially constructed with automatic control of temperature is rather expensive. Added to this is the expense of moving the bees into and out of the cellar spring and fall. However, this expense and labor may be justified, especially in northern regions where protracted sub-zero cold spells occur and where bees get few winter cleansing flights.

• • •

Late summer and early fall flows of honey will insure brood-rearing and a good force of young bees. Not only that, they add to the colonies' larder. A beekeeper is fortunate if he is in a locality where late flora is abundant. Goldenrod followed by aster is a distinct asset.

• • •

Price Ceilings on Honey are not yet settled. We have nothing new to report since that given in our last issue page 605. In the meantime some not understanding may unwittingly continue to violate the law. Others, intentionally or otherwise, will take chances and perhaps get into trouble. Where there are prices on several different grades of honey in the same locality there is bound to be confusion. Gleanings believes that the O.P.A. will yet see these inequalities and correct them. We must not forget we are in a great war and have patience.

• • •

On honey price ceiling, Dr. E. F. Phillips, who has just been down to Washington, expresses the hope of "an early decision" now that the fight between the Administration and the farm bloc has been settled in the bill just passed. "Under the circumstances", he adds, "it may be fortunate that the honey crop for 1942 was light." As it is, beekeepers and honey packers don't know what price they can safely make or accept.

• • •

Sugar for Bees We have heard from a few beekeepers over the country who have experienced some difficulty in securing their allotments of sugar—10 pounds per

colony from local sugar rationing boards. It seems that the chairmen of these rationing boards may not understand the Sugar Rationing Order that makes provision for sugar to feed bees. Furthermore, they may not understand that winter feeding must be done in October or early November in the north.

We have just received from Jas. I. Hambleton, Division of Bee Culture, a copy **of "Amendment of Regulations for Obtaining Sugar for Bee Feeding",** which appears in full on page 682 of this issue. Please note especially that the application shall be made on O.P.A. Form R-315.

• • •

No National Meeting at Nashville As noted on page 688 this issue, there will be no separate or joint meeting of the National Honey Producers' League or of the Southern Conference at Nashville this year. But sub-committees of both organizations have been and will be in Washington to look after the interests of both organizations. This cancellation is in line with the request from the Government to save gas and rubber. No special or extra trains will be allowed and, moreover, the difficulties of travel are great, as some of us know.

How far this action will influence winter state beekeepers' meetings can not as yet be stated.

Let's save all the gas and rubber we can, turn in our scrap metal, and buy war bonds till it hurts.

• • •

Some Advantages of Two-Story Wintering In the third edition of Langstroth's book, "The Hive and the Honey Bee," the chapter "Wintering Bees" refers to cutting a hole about an inch in diameter in the center of each comb, about one-third from the top, late in the fall, to permit the bees to move laterally from one comb to another for a fresh supply of honey during cold weather. Wm W. Cary, of Massachusetts, invented a process of making these holes without removing the combs. In those days colonies were wintered in single-story brood chambers. With our two-story system of wintering (some beekeepers are wintering in three stories), the winter cluster can easily move toward the side of the hive if necessary, especially if the center of the cluster occurs between the two sets of frames. Obviously the winter cluster in two-story wintering should be larger than in single-story wintering and this is an advantage. As mentioned in the Symposium, page 690 this issue, it is important to have the upper story or food chamber well filled with honey late in the fall in addition to what honey there may be in the lower chamber.

To secure a well filled food chamber there must be a favorable season for honey and it seems necessary, in regions where little if any fall flow occurs, to keep the food chamber above a queen excluder during the major honey flow and until the cessation of brood-rearing in the fall, at which time the excluder may be removed. This prevents the queen from going up into the food chamber during the latter part of the season to establish a brood nest.

In regions where a heavy fall flow occurs the queen may be given access to the combs of the food chamber as well as the lower chamber throughout the season. During the late flow when the nights become cool the food chamber is usually well filled and the queen is forced down into the lower chamber, which is an ideal condition for winter. This method entails less labor.

The correct management of the food chamber or double brood chamber hive, in various regions, should be governed by conditions. The important point is to have it well filled late in the fall. It is essential to have each colony supplied with an abundance of good stores—honey and pollen, properly placed.

• • •

Pollen, Hay Fever, and the Honey Crop From reports received it is apparent that the pollen count this year was considerably less than last year. Since pollen of certain plants is the cause of hay fever, it is easy to see why this malady was less troublesome this year than last year. Erratic weather apparently interfered with normal development of pollen plants causing hay fever.

Conditions unfavorable for the production of pollen would be unfavorable also for the production of honey. However, we have noted an abundance of pollen in hives throughout the latter part of the season.

The aggregate production of honey was somewhat lower than last year in spite of the large number of beginners entering the business.

Colonies Starving with Plenty of Honey This has often occurred and will occur again after a prolonged cold spell during winter when the cluster of bees is relatively small. In former days when we attempted to winter bees in single hive bodies the size of the cluster was often no bigger than one's fist. We could see these little bunches not frozen but starved to death within an inch or two of honey. Now, with our large clusters in two-story hives such starvation has been eliminated except in cases of neglect or poor queens.

A young queen and a couple of pounds of package bees given in late fall may save a colony. Uniting one or more small clusters in September may avert certain disaster. Put them together in the late evening, using a little smoke to prevent fighting.

• • •

Conpensations in Seasonal Honey Flows It was A. I. Root, the founder of this journal, who once remarked that when white clover was almost a failure, the fall flow would usually be abundant enough to give the bees natural stores and pollen for winter. Conversely, when there was a good white clover season, the fall flow might be light or almost negligible. During a cold, wet spring, like we had this past year, bees were not able to take full advantage of the nectar available. Clover plants do require wet feet early in the season. On the other hand, if it is too dry during spring months clover may fail to yield. It is a spring and summer of extremes that seems to work against the secretion of nectar. This year the ground was so wet that when it began to dry up a little goldenrod was quite abundant, followed by good growths of aster, and aster comes nearer being universal over this country than almost any other honey plant. This fall bees apparently did good work on goldenrod but did not quite fill up. Then came the frost, but aster does not seem to be injured and will often yield more nectar **after** a frost than before.

This year at Medina bees worked heavily on asters. If the weather remains favorable and this honey should be sealed, bees will winter on it without much if any loss, providing, however, **the colony is strong** in two stories, with plenty of pollen.

This compensation scheme of nature has enabled our bees in and about Medina to get along without sugar feeding for the last 20 years. We have had to resort to sugar this fall for a few colonies that were shaken heavily to supply package bees.

The old dogma that aster was a poor food for wintering was based on small colonies in single-story hives, insufficient stores early in the summer, leaving the bees to depend on aster honey not ripened. Heavy packing of such a colony was of little benefit.

• • •

"Double Duty for Legumes" The above is the title of a splendid article by J. Sidney Cates, appearing in the October 1942 issue of "Country Gentlemen". One cannot read this article without being brought to a realization of the important part legumes play, not only in maintaining soil fertility for maximum food production but also in reducing demands on nitrates used in ammunition to fight the enemy.

At least nine legumes are mentioned: Red clover of various strains, White clover, Subterranean, Persian, Ladina, Lespedeza, Lotus or Trefoil, Alfafa, and Sweet Clover.

Apparently those vitally interested in legumes may not realize how essential and indispensable honeybees are as pollinating agents. Most of the legumes require bees for pollination, and unless a sufficient number of bees are within easy flying distance of the plants while in bloom they will not be pollinated, therefore maximum propagation of these plants will not occur.

The article in question is excellent, and would be even more so had honeybees been mentioned as the indispensable agents in the propagation of a number of the legumes. It seems likely that in the near future our clover growers may be asking for, and perhaps demanding more bees to pollinate blossoms in order that more seed may be produced to plant more legumes, to increase soil fertility, also to make available more commercial nitrates (used in fertilizers) for war explosives.

It may be a little difficult for most of us to comprehend the immensity of the program that confronts agriculture today. The beekeeping industry must measure up to its responsibility in helping to carry forward the project now under way.

From North, East, West and South

NORTHERN CALIFORNIA, Oct. 5

Weather: The past month has produced some of the finest bee and honey weather of the entire season. Our complaint is that it came after our honey season was over. During the month we had little fog and very little of the cool weather we had during the entire honey season. So far we have had but one light shower of rain. This came about the middle of the month and was just about enough to remind us of what we might expect before October is past. While we usually expect rain in October and November it does not always come and we wait till later for our rainfall. Beekeepers farther north like the early rainfall for it gives the deep-rooted honey plants an early start. Here in the Bay Region where we depend on the eucalyptus to start our honey flow we are not so particular whether we get the early rains or not. What we do like is to have clear and warm weather when the honey flow is on. There is one thing we can boast of and that is because of the early flow we can be first to predict a 1943 crop. If the weather is right when the eucalyptus is blooming we are quite sure of a crop. And the best of all, we have educated our people to like our honey and we have a good sale at home.

Condition of Bees: There is a variety of reports. Some tell us that there are localities in the state where many bees will starve before the next honey season comes on. Then another report will come from the same part of the state telling us that bees are in fine condition, going into winter quarters with plenty of honey. The majority of our beekeepers make an effort to requeen and have their bees in first class condition for winter. The report in spring is usually good.

The Honey Market: The local demand for honey has been exceptionally brisk, and many beekeepers who formerly sold their honey at wholesale are finding sufficient demand from nearby consumers and stores to take care of their crops. This refers to the small producer. The commercial producer is depending on the buyer and is having little trouble to get rid of his crop at a reasonable price.

Beeswax: The demand for beeswax continues good and beekeepers are receiving a good price at home for all they have for sale.

Miscellaneous: The Board of Managers of our State Association are experiencing some difficulty in deciding the kind of a meeting to hold instead of the usual convention which has been held annually in November for many years. Our association has grown in numbers till there is great rivalry in cities making application for it. Last fall we had invitations from our largest cities for the 1942 meeting. The war situation has made it impossible for cities to entertain such numbers as would attend one of our conventions. According to present plans the Board has decided to hold a two-day meeting centrally in some southern city where the election can be held. Then a number of one-day meetings covering the state. By this plan the organization can be greatly improved, and organization is what we need more than most anything else.—Cary W. Hartman, Oakland, Calif.

• • •

SOUTHERN CALIFORNIA, Oct. 1

Weather: Southern California is basking in sunshine very much as it has during the past five months. Temperatures have not been excessive, neither too hot nor too cold. No rain has fallen during the past month and we have no prospects of any at the present time. Southern California can well come under the list of countries having two seasons, the wet and the dry, and after nearly 50 years we would say the dry has much the better of it. The great surprise to most of us is that vegetation stays green and springs into new life so quickly when the fall rains do come.

We had the pleasure of attending a gathering lately where several boys from the U. S. Naval Hospital four miles from Corona were guests. In

answer to the question, "Where were you from before enlisting" one boy said, "I am from Louisiana and was teaching music in the Junior High School. I like California very much but the thing that I cannot understand is, how you get along so well without any rain." One can imagine what a revelation it would be, coming from a wet state like Louisiana to a dry one like Southern California.

Honey Crop: With the exception of a few sections where athel, alfalfa, or beans furnished a little nectar the honey flow was over in Southern California before September. Bees have been active, for, as most readers know, they will keep busy on any kind of broken fruit or grapes where they can get at the juice, as well as the few flowers that can be found blooming in almost any garden. To watch them on the alighting board, many of them carrying loads of pollen, and listen to their contented hum, one would have to admit they are busy but not to the extent of storing surplus honey.

Market: The demand is active for honey with prices advancing somewhat.

Beeswax is in good demand with prices up possibly three cents, since our last letter.

Miscellaneous: If we were to draw a circle 100 miles in diameter, with the center at Blythe near the Colorado River in our County, this would include about one-half in Southwest Arizona and the other half in Southeast California. Within the circle we would have conditions and honey prospects very much the same. Native plants that furnish nectar, such as mesquite, catsclaw, willow, as well as many other desert shrubs and flowers, abound in both States.

The cultivated and irrigated valleys on both sides of the Colorado River grow about the same crops, trees, and shrubs that furnish nectar. Migratory beekeeping is not carried on in that territory nearly to the extent that it is farther west, but the average per colony over a period of years has been greater than in many of our apiaries where migratory beekeeping is practiced. Surely it gets hot out there; the thermometer often going well above the 100° mark but people get used to it and do not mind it.

Labor—yes, that is one of the things that is very much in the minds of many beekeepers. Will we be able to secure help for next season's work? One large operator is working on a device that will assist in loading and unloading heavy two-story colonies from the truck. If any readers of Gleanings have any such contrivance the writer as well as many others would surely like to know of it. Migratory beekeepers as well as others must cut every corner possible to keep down expenses. As it is now it takes two men with strong backs to lift the heavy two-story colonies on and off the truck. To have that feeling of safety that colonies have stores sufficient to winter and build up for the honey flow, many beekeepers want them to weigh well over 100 pounds.—L. L. Andrews, Corona, Calif.

• • •

TEXAS, October 1

Weather: September found the bees in excellent condition but in many parts of southern Texas they were somewhat scattered due to the fact that the beekeepers had not been able to visit their yards and repair the damage done by the Gulf storm of August 30. Many reports from beekeepers in that section indicate that the bees were considerably disturbed, many hives upset, and nearly all lids removed, however there was not sufficient rain and the weather was cool enough so that little damage and no robbing followed. The month as a whole was cool and somewhat moist.

Many of the native spring plants including anaqua made a rather profuse fall bloom which the bees worked industriously. No surplus was recorded but new nectar was visible in hives examined. This condition stimulated brood-rearing to a considerable extent. At the end of the month the bees are in excellent condition to go through the winter. It is hard to say anything relative to the condition of honey plants. Had it not been for the fall blooming period the condition would have been excellent but there are no data on the effect which profuse fall flowering will have on the plants which commonly give the spring surplus.

Crop Conditions and Prices: The previous demand for honey apparently has taken the 1942 crop that was

ready for market. There is still a good demand for Texas produced honey especially the darker varieties. These, however, have been exhausted. The honey offered for sale in the stores is mostly imported from other states.

Miscellaneous: The demand for queen bees would indicate that small beekeepers are increasing their number of colonies. Commercial beekeepers report that they have their apiaries up to capacity and during the winter expect to repair all fixtures and to acquire new equipment so that they can divide colonies early in the spring. The increase in beekeeping throughout the southwest in 1943 will be largely confined to beekeepers who have been in the business for many years. Some beekeepers who are not novices have acquired either ownership or lease on many small holdings and they, too, will be in the field to harvest a honey crop for 1943.—H. B. Parks, San Antonio, Texas.

• • •

COLORADO, Oct. 8

Weather: We have had no rainfall worth mentioning since May. The long dry summer has resulted in one of the longest continuous honey flows that we have ever experienced. While this dry weather has been great for the crop of the present, it has put the odds against the crop of the future. Not since 1934, have we seen the unirrigated soil so dry as it is now. Much of our crop this year came from the sweet clover that grows on waste land and has no irrigation.

Honey Crop: Those who had their bees in shape to gather honey when the flow came have made a good crop. Our own bees have made an all-over average of better than 120 lbs. with a few yards in the better locations securing more than a 150-lb. average.

Producers who build up on the flow from first cutting alfalfa (this flow does not as a rule amount to much due to damage done by alfalfa weevil) missed something this year. The flow from first cutting alfalfa was very good, and owing to the shortage of help on ranches ran right into the flow from white sweet clover. This, also, was better than usual and carried up well until second cutting alfalfa was in bloom. Second cutting alfalfa has in recent years been our one reliable source of nectar. Strangely, this year it was not at all dependable, and in some locations yielded very little. I hope no one asks, "Why".

During the past month bees have been gathering pollen and a small amount of nectar from rabbit brush and third cutting alfalfa. Just today quite a few bees have been noted on late blooming sweet clover, truly making this the longest period of honey flow ever observed by this writer.

Condition of Bees: So far as food conditions are concerned all is well. It is seldom in this region that bees that produce a good surplus crop get the opportunity to jam the brood combs with nectar and pollen after the main flow is over. This year there is much pollen covered with honey in both stories which will mean rapid build-up next spring when brood-rearing starts.

For reasons unknown colonies have failed to supersede as usual this fall and we face a new season with many old queens, queens that have completed two, and even three, seasons of egg production. We are wondering if they will last until they can be replaced next spring. We, of course, know about fall requeening, but there just does not seem to be a place in our system for the practice. It has always worked out best for us to kill off any colony that did not show promise of wintering well, and then replace with a package in the spring. Any other requeening is then done by the nuc method before or at the beginning of the main honey flow.

Market: Our crop of extra honey has been much sought after. Offers of up to 11¾c have been received. But co-operatives seem to have been doing more for the honey industry than any other honey marketing organizations; and since Colorado beekeepers have shown a continued reluctance to organize their own Co-op, we have applied at Sioux City. When beekeepers become enough interested in their own affairs to attend meetings, discuss group problems, submerge petty, private interests, and take advantage of their collective strength,—then, and not until then will many of their marketing woes vanish like clouds before a summer sun.—J. W. Holzberlein, Jr., Grand Valley, Col.

BRITISH COLUMBIA, Oct. 3

Market and Crop Conditions: It may be trite to remark that time brings changes, but who, in the bee business, a year or two ago, when ways and means of marketing our product were perhaps the chief topic of interest in the industry, would have dreamed that we would shortly be compelled to ration honey to retailer and consumer alike? Honey has passed out of the slow moving class of goods, to one in such demand that when the beekeeper does take honey to his grocer he is likely to be treated as a most welcome visitor.

In B. C. we do not produce enough honey to take care of normal consumption and wholesalers have imported many carloads annually from other provinces, notably Ontario and Alberta. So far as we know no honey has yet come through from Ontario. The first shipment of Alberta honey has just arrived on the Vancouver market. Very few retail stores have been able to secure honey and these few have rationed their own customers.

According to an early estimate by Mr. A. W. Finlay, the Provincial Apiarist, the crop in this province will be only about 70% of normal. In the Coast section the crop seems to have been negligible owing to too much cool and wet weather, but here in the Interior a fair crop was secured in some localities although this was not general. Spray poisoning took its toll and still further reduced the crop.

Miscellaneous: Some trouble has been reported locally from skunks which are particularly numerous this year. One man claimed that he had lost 21 out of 22 colonies from their depredations but we are inclined to the opinion that spray poisoning was a contributing factor.

One of our own neighbors actually trapped no less than 27 skunks in his bee-yard this summer and blames the loss of a half dozen colonies to this cause.

A dry September brought early cessation of egg-laying, and brood has now practically all emerged but colonies in general seem strong in bees and in good shape for winter.

A feature of our own locality this summer has been a largely increased acreage to onion seed and the nectar from this source reached the proportions of a minor honey flow between first and second crops of alfalfa and while the onion odor was very strongly in evidence at the time, the flavor of the resultant honey leaves nothing to be desired.

The new ceiling on honey as set by the Wartime Process and Trade Board seems to have struck about the average price already being obtained by most producers here and will be considered quite fair though many retailers will find their profits cut if the provisions of the order are strictly enforced.—G. F. Pearcey, Kelowna, B. C.

• • •

ALABAMA, Sept. 28

Weather: The summer has been characterized by showers to such an extent that plants have grown rapidly. On the whole, nectar secretion has been good although there are a few areas in which no nectar has been gathered for two months.

Condition of Bees: For the most part the bees are in good condition. In some areas where cotton poisoning was practiced the loss of colonies was severe. In a few other areas some yards of bees are near starvation because there has been no flow for the past two months. These are the exception however and it is expected that most colonies will have adequate stores and bees for winter. Purslane is yielding well and aster promises a good flow.

Package Bees for 1943: Alabama shippers have been both fore-sighted and fortunate in obtaining their cage material for next year. Most of the shippers have the supplies they need. Labor will probably give the greatest concern. There is no indication just now that the necessary labor will not be available and shippers are planning their season on the present outlook.

The shippers will be aided in organizing their 1943 season if their regular customers will place their orders early. These customers will profit from early ordering by getting desirable shipping dates. Buyers sometimes overlook the fact that any given shipper's capacity is only so much. His shipping season lasts only about six weeks and each day is usually booked to capacity. It is often impossible therefore for late orders to be filled as early in the season as the buyer might wish.—Harry H. Laidlaw, Jr., Montgomery, Alabama.

NEW YORK, October 5

Weather: Rainfall has been above average throughout the season over most of the state, although parts of western New York and the extreme northern portion are said to be very dry. Here we have an accumulation of nearly three inches above normal since January 1.

Honey Crop: .Locally clover was nearly a failure but other sections, notably northern New York, secured a fine crop, although not necessarily a bumper one. Buckwheat has probably yielded an average crop but producers have not yet completed extraction in a number of instances. Yields from fall flowers have been rather spotted. Goldenrod has practically finished blooming and while there appears to be plenty of aster blossoms bees show no great amount of interest.

Honey Plants: As a result of heavy rainfall clover fields are above average in condition. New seedings are excellent but beekeepers are wondering what effect fall blossoming of alsike will have on it for next season. New seedings of alsike have actually been in full bloom during September, in fact, in this locality, more clover was in blossom during that month than during June and July. Bees have been working it actively, but have apparently gathered little nectar.

Miscellaneous: Bees are about average in condition, most colonies having only sealed brood in about four frames. In our own apiaries we have found quite a variation in the amount of stores for winter. Some yards require no additional stores while others are going to need sugar syrup. We have fed no syrup for at least three years and expected to feed none this season, but during the past few days of weighing each colony in every apiary we find many colonies have not filled in the outer combs of the lower brood-nest the way they generally do. We saved many more feeder combs than usual but will not have quite enough and we aim to have each colony weigh at least 120 pounds (this includes bottom-board, two brood-nests, and the inner cover). Weighing is done by means of spring scales which hook under each side of the bottom-board and two fellows simply lift up on a stick attached to the scales until the colony hangs free. We weighed six apiaries today and removed excluders from between the brood-nests, checking each colony for condition at the same time.

Beekeepers are becoming increasingly aware of the distinct labor shortage and a number of local commercial men have been without help during most of the season. One beekeeper with around 700 colonies has worked alone all season and another with about 1400 is trying to take off the buckwheat crop alone. How can production be increased if even inexperienced help cannot be secured?—William L. Coggshall, Ludlowville, New York.

• • •

MISSISSIPPI, October 6

Weather: Summer and early fall conditions have not been very favorable for beekeepers in most of Mississippi. In the Gulf Coast section and southeastern counties there was too much rain, while the northeastern area was generally too dry. The last days of September were the coolest in many years for that date, the temperature going into the 30's on a few nights, but they were cloudy and windy and no frosts have occurred at State College yet.

Crop Conditions: This has been a disappointing season, beginning with the vetch and clover flows in early spring. Our small College apiary has averaged only 80 pounds, chiefly from vetch, as compared with 165 pounds per colony in 1941. In addition, the late summer and fall flows for winter stores have been very light. A beekeeper at Vicksburg reports 36 pounds per colony, or only 40% of his 17-year average, with practically no fall flow. A large apiary near the Gulf Coast reports 50 pounds per colony, with a small amount of nectar at present from Mexican clover. Another report from the central part of the state gives only 20 pounds per colony with no flow at present, but in this case about two packages per colony were shipped, which accounts in part for the low yield. Another beekeeper in the northeastern section reports an average of 50 pounds from an apiary

which also produced about three pounds of package bees per colony. Bees are showing considerable interest in goldenrod at present.

Miscellaneous: The fall count of colonies shows about 20 to 25 per cent increase over the number in the fall of 1941, according to reports from a few honey producers. Package shippers, however, indicate that they plan to operate in 1943 less than 10 per cent more than they have this year.

Nearly all 1942 honey is already sold. One apiary reports 20 per cent still on hand, but most of them have none left.—Clay Lyle, State College, Mississippi.

• • •

FLORIDA, Sept. 21

On account of illness, the writer was out of circulation for about six weeks. Since returning to the office he has not had time to get in touch with the bee and honey conditions in the state.

Weather: As a whole, Florida has had its usual summer weather, with the exception that it has been exceedingly hot. In fact, this has been one of the hottest summers on record in the state . Taking the state as a whole, we have had abundant rainfall, but in some sections the rain came too late for some of the summer flowers. In the Newberry section the Partridge pea flow was short on account of dry weather. Black Mangrove flow on the east coast was short for the same reason. However, cabbage palmetto which grows in the same sections as Black Mangrove, yields better in a dry season and this resulted in the beekeepers in that section getting a fair crop of cabbage-palmetto honey.

Condition of Bees: As a rule, bees are in fair condition. In the sections where the summer flows were short, it may be necessary for the beekeepers to do some feeding, unless they get a good fall flow.

Honey Market: .Honey has been moving fairly well, and most beekeepers who sell wholesale have disposed of their crop. Some of those who sell to retailers have sold out and are having to buy from other beekeepers to fill their orders.

Prices: The first of the season honey was selling at all kinds of prices, but the market has settled now and the average price for the best grades of extracted honey is 11 to 12 cents a pound in barrels. Lower grades are selling for 7 and 8 cents. Beeswax has sold at 35 to 40 cents a pound.

Miscellaneous: From all reports, it appears that the beekeepers of Florida have produced a fair crop of honey and wax this year. Whether they will be able to do as well next year is problematical. The shortage of labor, gas, tires, and supplies is getting more acute every day. Several of Florida's best beekeepers are in the Army or Navy. Most of the men who have been trained in bee culture by the beekeepers, in order that they might become efficient help have entered the armed forces. The production of a maximum crop of honey and beeswax next year seems like a big problem.—Robt. E. Foster, Gainesville, Florida.

• • •

MASSACHUSETTS, September 22

Weather: We have had a cool rainy summer. Vegetation has been abundant and green, and the pastures and fields have an April appearance. While clover was abundant over much of the state, from reports that have come in, there will be very little clover honey mixed in with the general crop.

Condition of Bees: Colonies are now in excellent condition, with brood-rearing proceeding in the usual heavy manner. There was considerable supersedure in some apiaries, and swarming was a problem during May and June and again in August.

Crop Outlook: Very little light honey will be produced, but strong colonies have gathered an average or better than average crop of dark well-flavored honey. **Clethra** (sweet pepper bush) has failed to yield due to the cool wet season, but **Lythrum** (purple loosestrife) produced a good mid-summer crop where available to the bees. Colonies near large squash, cucumber or cranberry bogs obtained some excellent honey from these sources. Our southern New England crop is derived from so many sources that it is almost impossible to keep the honey separate. Some

years the summer crop is light in color and of good flavor and other years, it is dark, but whether light or dark it can be sold for the same prices if quality and flavor are emphasized.

There have been many reports of large yields of honeydew this year which is quite unusual. Samples have been sent to me from beekeepers who have kept bees fifteen years and never previously had experience with this insect secretion. This honey is very dark, almost tasteless and of a disagreeable flavor. Beekeepers must be cautioned to remove all this honey from the brood chamber in preparing for winter, and replace with good honey or feed sugar for winter. This honeydew may be saved to supplement spring stores, for raising brood during favorable spring and summer weather, but must never be fed for winter because the bees can not fly out to clean themselves during cold weather.

Miscellaneous: Packing saves stores and bee energy, and appears necessary in very cold climates. Some form of upward ventilation is advisable to provide a means of allowing the escape of excess moisture. Whether this is a hole bored through the hand-hold in the upper hive body or the escape hole left open (covered with wire screen) to allow the moisture to escape up through the packing and out of the hive is up to the choice of the beekeeper. I have not seen any beekeeper using the hole in the front of the upper hive body with bottom entrance closed here in New England but am going to try it out myself this winter in a small way.

Later—October 1: The late fall flow from goldenrod and late aster appears to be a total failure. Since writing these notes on September 22 the bees have barely taken in enough honey to support the colony.—R. E. Newell, Holliston, Mass.

• • •

ONTARIO, October 6

Weather: Following a few night frosts, our forest trees are showing all the colors of the rainbow, reminding us that the leaves will soon fall, and that winter will be here again. Of course the honey harvest is all over for this year for this part of the continent—indeed, we rarely if ever have any flow here after September 1st. A generous moisture supply has kept clovers and other vegetation as green as in the month of June, and clover appears to be plentiful everywhere.

Crop Conditions: Nothing new to report regarding honey except to emphasize the very short crop of the great majority of the beekeepers of Ontario for 1942. Dozens of Toronto people have told me recently that it is impossible to buy a pail of honey in that city,—imagine such a condition in a city of over three-quarters of a million. Over 40,000 pounds of honey left our extracting house and now a sign is up saying "Sold out", to avoid having so many cars stop for nothing. The buckwheat honey crop was light in most localities. In Victoria County where we have two apiaries, a fair yield was obtained as a large acreage of quite early buckwheat was sown, and we had one very warm week when it was in full bloom. Here in York County all buckwheat was late in blooming, and weather quite cool at that time, so almost no surplus was secured. Buckwheat honey is usually a slow seller locally, but this year it went just as freely as the white, and sales were only limited by the amount we had to sell. The demand for beeswax is also keen and prices of around 45 cts are being offered.

The ceiling for beeswax in Canada is set at 48 cts. but so far we have not heard of any being sold at the top figure.

Miscellaneous: Feeding bees is quite general and as evidence of the extremely poor season locally, at least, come reports of colonies already starved where the bees were not examined before Oct. 1st.

On Sept. 14th,, Order No. 182 came into effect throughout the Dominion, that specifically sets a price ceiling for honey wholesale and retail. While its provisions will not likely please everyone yet in our humble opinion it is much more satisfactory than the previous rulings, that were, to say the least, very ambiguous in many respects. Briefly, we give a few provisions as they affect the most common transactions of the honey trade—bulk prices and sales of the standard size pails,"twos," "fours" and "eights." Bulk price of honey as extracted and not processed is 12½cts. per pound— no mention as to source of nectar, so I pre-

sume buckwheat or other dark honey can legally be sold at the ceiling price as named. For wholesale ceiling of the pails, a price of $7.50 per case of twos, $7.25 for fours and $6.75 for eights is the maximum figure—in each case a net weight of 48 pounds is contained in each package. Prices are also given for honey in glass, and for retail, a markup of 25c above wholesale prices is allowed. Anyone interested—and all beekeepers in Canada will have to be interested—can obtain copy of the order by getting in touch with the Wartime Prices and Trade Board.

It is quite interesting to read that report on page 621, of October issue of Gleanings in which the yields per colony, etc., are given for all the States in the Union. We note that the Dakotas and Montana stand high in colony yield, while but a short time ago these States were negligible as honey producers. Across the line in that territory, Manitoba, Saskatchewan, and Alberta stand out in the same way when compared to the older Provinces of Canada. Of course, two factors are almost 100% responsible for this great change,—perfecting of the package bee business and the growing of sweet clover. During the past 60 years or more we have noted some great changes in the beekeeping industry, but possibly none more surprising than the development of the business in the territories just mentioned.

The Ontario Beekeepers' Association will hold its Annual Convention at the Royal York Hotel on Nov. 24 to 26. The fact that Ontario has the shortest crop of honey in many years is not a factor conducive to a big attendance but we venture to predict that a goodly number will be present. Of course, we look for a number of our friends from over the Border, as there are no restrictions that will hinder them from coming, so far as Canadian regulations are concerned. —J. L. Byer, Markham, Ontario.

AMENDMENT OF REGULATIONS FOR OBTAINING SUGAR FOR BEE FEEDING

The following teletype message has just been sent by the Office of Price Administration to all O.P.A. State directors. The message is self-explanatory.

Cases have come to our attention of where beekeepers have extracted every bit of honey available with the expectation of getting sugar to carry the bees through the winter. In the face of the nation at war and with sugar being rationed, such action is, of course, foolhardy. Indications are that if the war continues, sugar will be more and more difficult to obtain. Beekeepers should save enough honey to carry the bees through periods of dearth and through the winter as there is no telling how soon it may be necessary further to curtail the amount of sugar that can be made available for bee feeding.

—Jas. I. Hambleton
In charge of
Division of Bee Culture

"Because the fall flow of honey has been below normal and the main honey harvest has been below earlier expectations, many beekeepers who have already used their full 1942 provisional allowances under Table VI, Schedule A, of the Sugar Rationing Regulations, are faced with a grave danger of loss of the bee colonies because of insufficient feed for wintering bees. Accordingly, favorable action may be taken by State directors upon application of beekeepers under the following conditions:

(1) The application shall be made on O.P.A. Form R-315.

(2) The beekeeper shall state on the application that he has obtained his full 1942 provisional allowance for each colony for which the application is made and that this sugar plus the honey in each such colony is insufficient to feed the bees in that colony until they begin to produce honey in 1943.

(3) The beekeeper shall also state on the application that he will not, after the date of application, if it is granted, take any honey out of any colony for which application is made until the bees in that colony again begin to produce honey.

(4) The total amount of sugar that may be granted for each colony pursuant to this teletype is 15 pounds. If the director grants the application, his decision shall state that the amount granted is an advance on the beekeeper's provisional allowance for 1943 and 1944 and will be deducted from such allowance, and that the beekeeper should, therefore, maintain a reserve of honey to feed the bees during 1943 and 1944. This authorization is in anticipation of an amendment."

October 5, 1942.

American Honey Institute News Notes

The American Honey Institute would like very much to be able to prepare the Annual Directory on January 1st. Members can help by having their names listed prior to that time. Members will be especially proud to have their names listed in the Annual Directory this year because our industry is playing an important part in the Victory program. Those whose names are listed will have had a share in the Research Program on the vitamin content of honey and in the supplying of information on honey and honey recipes to the many nutrition groups throughout the country. To illustrate the letters received daily at the office, a copy of but two of the letters that were received from large cities today follow:

"The Nutrition Department of the ——Chapter of the American Red Cross has received the supply of 'Favorite Honey Recipes,' which we ordered from you, as well as the pamphlet 'Honey Around The Clock'. The chapter wishes to thank you for your generosity, as it is cooperation such as you have given that helps us carry on this Nutrition Program."

From a Broadcasting Station: "I have your sample folder, 'Make Every Meal a Guest Meal with Honey Recipes,' and think it is very attractive. The recipes are delicious sounding and I would appreciate it if I could have about one hundred and fifty of them."

• • •

The American Honey Institute has received many letters during the past year addressed to "Old Favorite Honey Recipes" but in today's mail one letter was addressed to "Energy for the Task", Madison, Wisconsin. We trust that every individual, from the youngster up will know that Honey is needed to keep up the energy. You can help educate the boys and girls and their mothers and fathers by seeing that a copy of "Honey Recipes—for Sweets, for Energy, for Conservation" and a copy of "Old Favorite Honey Recipes" is in every home. Another rerun of 100,000 copies of "Old Favorite Honey Recipes" will soon be made.

• • •

The Director gave two broadcasts during the first week in October. One was on the lunch box, which has become an established meal for the American family and the other was on Honey Fruit Cakes.

• • •

Many of the requests for "Old Favorite Honey Recipes" during October came as a result of articles in CONSUMERS' RESEARCH, SUNSET MAGAZINE, ARIZONA HIGHWAYS, and JOURNAL OF HOME ECONOMICS.

• • •

A sample copy of our new little recipe booklet, "Honey Recipes—for Sweets, for Energy, for Conservation", will be sent upon request to any honey producer. Kindly address your request to American Honey Institute, Madison, Wisconsin.

NATIONAL BEEKEEPERS' AUXILIARY

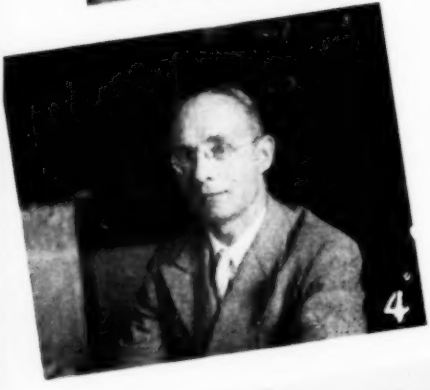
The National Beekeepers' Auxiliary has enjoyed a good year. A membership contest which began with the convention at Niagara Falls and which will end midnight November 16 is called to the attention of the women of the United States. The older State Auxiliary having most membership paying dues during the period from the convention at Niagara Falls to midnight November 16 will receive fifty copies of "Old Favorite Honey Recipes" and the new Auxiliary having most memberships paid for the same period will receive the same number of these books. So far California leads the older Auxiliaries and Arizona the new ones. The prizes are the personal gifts of the President and Secretary-Treasurer to the Auxiliary. It was originally intended to extend membership contests from convention to convention but since there will be no convention the contest will end on the day scheduled for the convention at Nashville. Shortly after November 16 a mimeographed News Letter will be sent giving all available information and results of the contest. Send dues of twenty-five cents per year to Mrs. John Kirschbaum, Secretary-Treasurer, McGregor, Iowa.—Mrs. E. H. Bremer, President, National Beekeepers' Auxiliary, San Antonio, Texas.

No. 1. Pavilion where joint meeting of North Dakota and Minnesota beekeepers met on July 25.
No. 2. Dr. M. C. Tanquary, as we caught him in his office.

MINNESOTA AND NORTH DAKOTA FIELD MEET AT DETROIT LAKES, MINN., JULY 25

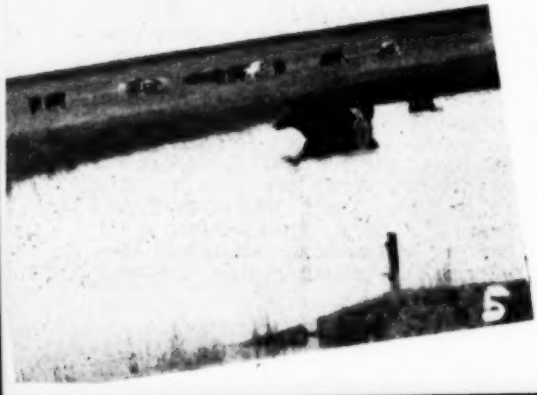
On pages 628 and 629 we presented a brief of the meetings held in Wisconsin and the pictures of a few leaders whom we were able to catch on the fly.Dr. M. C. Tanquary, Entomolo-

No. 3. Mr. R. F. Remer, Manager of the Sioux City Honey Co-operative, one of the largest buyers and distributors of honey.



gist and Scientist, and who probably has more field work under his direct charge than any man in the United States, met us at the meeting held in Ladysmith, Wisconsin, on the 23rd. He participated in the answers to the questionnaire referred to in our last issue, page 628. He drove us over to Detroit Lakes, at which point the joint meeting of the Minnesota and North Dakota beekeepers was held. That drive over the country from Wisconsin into Minnesota presenting an opportunity to talk with a man

No. 4. Dr. Mykola Haydak at his desk.



who had many colonies of bees under control, will long be remembered as a milestone by your Editor, older in years but not so wise in bee lore. There are few men in the United States, and I might say in the world, who have had a better training in scientific and practical bee culture than has Dr. Tanquary. I'll not go further in this matter because I want to speak of him and two or three others who will be mentioned in this and the next issue.

No. 5. Cattle may be seen feeding in fields of Minnesota and North Dakota. Occasionally one may find a pond of water near by.

No. 6. Honey-house used by Dr. J. A. Munro in his work teaching practical and scientific beekeeping.
No. 7. Dr. Munro, recently received his Ph. D. degree. He is here shown in front of the honey-house where his students are taught how to nail up bee hive material.

The meeting at Detroit Lakes on July 25 was held in a large pavilion where it was difficult to get light enough to take pictures of some of the speakers who rank high in the bee world.

The address of Dr. Frank Eversull, Pres. of the Agricultural College of North Dakota, at Fargo, on "The Life of Langstroth", was outstanding. See page 365 June number. Dr. J. A. Munro thought he would be interested and so gave him a copy of

No. 8. One of his experimental apiaries.

Miss Naile's "Life of Langstroth". Busy as he was, Eversull became so interested he read it through and then at this meeting gave us a magnificent word picture of Langstroth —one of the greatest men, if not **the** greatest to lay the very foundation for bee culture. He took up Langstroth's life and then the later years when he should have had peace and happiness, but had to go through ordeals that few men have to meet.

No. 9. Sweet clover fields which are very common in North Dakota. Dr.Munro standing in the background.

As he came to near the end, he explained those lapses into a form of melancholy that came and went. One could almost hear a pin drop, and as he closed, the audience was almost in tears.

Dr. A. G. Ruggles, St. Paul, State Etomologist and State Bee Inspector, spoke of the inspection work in Minnesota and of the importance of

(Continued on page 701)

No. 10. Sweet clover highway. The yellow sweet clover was in full bloom in late July. There was sweet clover everywhere for miles and miles.

Talks to Beekeepers

By M. J. Deyell

The accompanying twelve pictures showing one method of packing bees for winter were taken in November, 1941, at The A. I. Root Company's home apiary in Medina. The following numbered legends referring to the pictures should help to clarify the procedure.

(1) This shows the gang and packing material. Note the bale of straw on the end of the truck, also the rolls of asphalt paper on the ground. One bail of straw and one roll of asphalt paper packs twelve two-story hives of bees.

(2) First of all, a strip of wood, 16"x2"x⅜", is tacked on the front of the projecting bottom-board to form a tunnel from the entrance of the hive to the outside. A piece of asphalt paper 8½' x3' is cut from the roll and stood up around the hive, allowing a lap of about 8 inches.

(3) The paper is then fastened together, temporarily, with a slender nail, to hold the paper in place while the straw is put in.

(4) A small wooden strip, 16"x½"-x⅜", (these are approximate measurements) is nailed over the paper and into the edge of the wooden strip forming the top of the tunnel, mentioned in legend number 2. This is to prevent straw from getting into the entrance tunnel. The straw is now placed in the space between the hive and the paper (about five inches). Be sure to place straw in the corners first, then in the sides and ends. It is an advantage at this point to tie a stout cord around the bottom of the paper to help keep it in place. About six inches of straw is placed on top of the hive. We leave the outer hive cover on underneath the packing. Some remove the outer cover during the time the colony is packed.

(5) The top part of the roll of paper is folded in over the straw.

(6) Piece of asphalt paper 3'x3' ready to place on the top.

(7) Putting the top paper in place.

(8) Top paper, or cap, ready to be tied on.

(9) Top cord in place, also two cords tied to bind the horizontal cords together, also to prevent the cover from blowing off.

(10) The last knot tied.

(11) The finished product, except that **a small opening is made for the bees to get out, by cutting the paper directly under the wooden strip in front.**

(12) Shows packed and unpacked hives. These pictures were taken in connection with an experiment we conducted last winter comparing colonies packed and unpacked. See page 331 of June 1942 Gleanings.

The work should be done on a cool day when bees are not flying and hives should be handled very carefully. If the weather is too cold the paper cracks and fingers get numb. Packing should be completed, however, before cold weather sets in.

A Few Things to Remember

1. Hive entrances should be reduced to ⅜ inch, better still ⅛ inch to exclude mice from hives during the winter. Some use ¼ inch mesh stiff wire over the entrances. We use the intermediate opening in our entrance reducer which is about 4¾"x⅜". Reducing entrances also helps to keep cold winds from blowing into the hives.

2. Queen excluders should be removed from under the food chambers or upper brood chambers during the winter. One winter we experimented with a few colonies by leaving the excluders on. We lost some good queens by doing so, as in some instances the cluster of bees moved into the upper brood chambers and the queens being unable to pass through the excluders were left outside of the clusters to perish. In parts of the South where winters are mild it may be unnecessary to remove excluders during winter.

3. Never try to winter diseased colonies. If you do you may be sorry.

4. And last but not least, make sure each colony has a super-abundance of food. More bees die as a result of starvation than from any other cause. Populous colonies with a reasonable amount of protection and an ample quantity of good food are likely to winter successfully. A good windbreak against winter winds is an advantage. This has been demonstrated.

5. And again may I suggest that if your present method of wintering is giving good results, stick to it. Don't experiment too much.

1

2

3

4

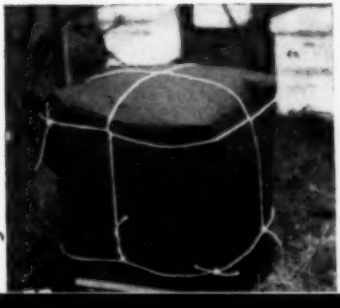
5

6

7

8

9



Just News

The annual meetings of the American Honey Producers' League and the Southern Conference have been cancelled.—James Gwin, President American Honey Producers' League.

• • •

The Oregon State Beekeepers' Association will hold its annual meeting December 4 and 5 in the auditorium of the Public Service building in Portland, Oregon.

• • •

"Resume of Operative Functions of the Division of Plant Industry" is the title of a 32-page booklet put out by the Ohio Department of Agriculture. Two pages are devoted to apiculture, giving a summary of activities in the administration of the apiary inspection laws.

• • •

Some sound advice is being sent to beekeepers by Geo. W. Bohne and checked by E. C. Davis in the form of circular letters from the Extension Department, University Station, Baton Rouge, La. The one for September is extra good. It stresses particularly the great importance of having honey properly clarified and keeping it free from granulation or fermentation. The advice will be helpful to beekeepers outside of Louisiana. It will do no harm to ask for a copy even if you are out of the state. Mr. Bohne is a free lance and a master of good English. He sometimes steps on peoples' toes and if you don't like it, well, you, you— ! ! ! He is six feet tall with big fists.

• • •

Georgia Beekeepers will meet November 10 in Tifton, at the auditorium of the Abraham Baldwin Agricultural College. Officials emphasize the importance of holding a one-day business session in view of the recent change of administration, and vital problems facing beekeepers and shippers due to war conditions. The limiting of this year's meeting to a one-day business session and the dispensing of the usual entertainment features, has been deemed advisable in order that full cooperation may be given the Nation's war efforts, and for economy.

• • •

In August, 1942, W. F. Callander, Agricultural Statistician, of the United States Department of Agriculture, Division of Agriculture Statistics, Orlando, Florida, mailed out several thousand honey and bee schedules to beekeepers in Florida. From the schedules returned Mr. Callander made a very good report of the bee and honey industry of the state. A better report could have been made if a larger number of beekeepers had cooperated by filling out these schedules and returning them. Mr. Callander informs the writer that this work will be continued over a period of years, and that another schedule will be mailed out in November. If we all cooperate with Mr. Callander in this work we will have a record of the bee and honey industry in Florida that will be of real value. I, therefore, urge every Florida beekeeper who received one of the schedules to fill it out and return it to Mr. Callander.—Robt. E. Foster, Apiary Inspector, Gainesville, Florida.

• • •

Whereas the welfare of Michigan honey producers depends upon the solution of problems similar to those affecting our neighbor beekeepers in Ohio, we, the members of the Michigan Beekeepers' Association assembled in convention at Frankenmuth, hereby resolve to enter into the formation of an organization of the honey producers of Michigan and Ohio to promote their mutual welfare and secure better representation of their wishes in all matters affecting the beekeeping industry.— Resolution passed at the Michigan State beekeepers' meeting.

• • •

The annual meeting of the Iowa Beekeepers' Asssociation will be held at Ames on November 12th and 13th in conjunction with other affiliated organizations of the State Horticultural Society. Mrs. Harriett M. Grace, Director of the American Honey Institute, will be the guest speaker and will also appear as a luncheon speaker of the Horticultural Society. The general discussion of the problems confronting the honey producing industry will serve as a central theme of the program.—F. B. Paddock, Extension Apiarist, Ames, Iowa.

• • •

Beekeepers, not only of Wyoming but of the United States as well, in the death of Charles Ranney, Lander, Wyoming, on September 26, have lost one of the industry's finest mem-

bers. Always progressive, Mr. Ranney quickly in his career adopted labor-saving machinery and equipment. He believed in shallow supers and back as far as 1926, believed the average man could handle more honey in half-depth than in full-depth supers. He said that the half-depth combs could be uncapped in less than half the time and he had very little breakage or leakage in hauling. Mr. Ranney watched the sweet clover blossoms most carefully and was thereby a reliable prophet as to the probable yield of honey. Mrs. Ranney expects to sell the bees and equipment.

• • •

We receive some inquiries regarding the importance of bees in the all-out war effort. Printed matter on this subject, suitable for local or city newspapers, is available at the Gleanings office.

• • •

The Middlesex County Beekeepers' Association will meet at 7 P. M. Saturday, November 28 at No. 19 Everett Street, Concord, Massachusetts. Mr. Walter M. Copeland, President of the Massachusetts Federation of Beekeepers' Associations will show colored moving pictures of beekeeping subjects and speak on "Beekeeping in The War". Our Ladies' Auxiliary announces they will prepare a hot meat pie supper with cole slaw, hot biscuits and honey, Washington pies, and coffee.—A. M. Southwick, Pres.

• • •

The York-Cumberland Beekeepers' Association of Maine will have an annual meeting on November 15 at 14 University Street, Portland, Maine, at 3:00 P. M. There will be the annual election of officers. The new proposed state law upon bee diseases will be up for discussion and comments. It is hoped that all persons interested in apiculture will attend this meeting. Milton S. Libby, President, H. C. Meriam, Secretary.—Charles O. Dirks, Sec.-Treas., Maine State Assoc. of Beekeepers.

• • •

In "Talks to Beekeepers" for October, 1942, I mentioned having my fingers crossed with reference to the possibility of having to feed a few apiaries sugar syrup this fall, not having fed sugar for 20 years, except a small amount in 1934. Well, I still have my fingers crossed. Yesterday the boys reported some colonies marked up ten days ago as needing syrup, now have plenty of natural stores. Yesterday, October 8, the scale hive gained two pounds. This hive has gained over eight pounds in October and over 30 pounds since Sept. 5, so here's hoping. Late aster is still yielding on warm days in spite of a very heavy freeze September 28.—M. J. Deyell.

• • •

Our Maine correspondent, Mr. O. B. Griffin, of Caribou, passed away last July. The department of "North, East, West, and South" will miss this veteran beekeeper-writer.

• • •

The Illinois State Beekeepers' Association meeting will be held November 13 and 14, at St. Nicholas Hotel, Springfield. A cordial invitation to all.

• • •

"How to Succeed with Bees" is the title of the latest edition of a beginner's book on bees by E. W. Adkins and K. Hawkins. It is well illustrated and printed. Copies can be obtained of the G. B. Lewis Co., Watertown, Wis.

• • •

"The Skeleto - Muscular Mechanisms of the Honey Bee" is the title of a book by R. E. Snodgrass of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, and published by the Smithsonian Institution, Washington, D. C. It is just off the press bearing the date September 30, 1942. Mr. Snodgrass' former book, "The Anatomy of the Honey Bee" came out in 1910.

• • •

Selective Service Action in Beekeeping. The Selective Service has recently included beekeeping among those branches of agriculture for which a reasonable degree of training, qualifications, and skill are required to perform the duties involved, with respect to their withdrawal from production. To determine whether or not any individual should be considered important to beekeeping as an activity essential to the war effort, specific information is required on the following: Training, skill, and experience, statements of the time required to train other persons to take up the work, and the availability of such persons. In discussing problems of this nature with local boards, reference should be made to Local Board Release Number 115, amended by Occupational

(Continued on page 700)

A Symposium

(Continued from October)

Well, where are we in this discussion? Have we gotten anywhere? Some will say "Yes" and others "No". Who actually knows?

It should be said, in all fairness that a "Symposium" may not and usually does not settle a problem for all time. A frank and intelligent discussion should at least tend to clarify matters. Beekeepers in various sections of the North may get ideas that will actually help them to winter bees better and, incidentally, to secure larger crops of honey and wax. That being the case a discussion of this sort is worth while.

As already stated or implied, the principles that govern successful wintering of bees in the North appear to be fairly well understood, although there is still much to learn about wintering. The average lay beekeeper knows comparatively little about what goes on inside of a cluster of bees during sub-zero weather.

The other evening I was talking with my neighbor, a druggist, and he inquired how bees live during the winter. He said "I suppose they freeze". He thought they hibernated. I then told him what I know, or think I know about it. When I explained that bees do not hibernate, but rather, start to form a cluster, spherical in shape, on the combs containing some honey when the temperature in the hive reaches 57° F. and that the cluster becomes more compact as the surrounding temperature gets lower, also that the bees on the outside of the cluster form a compact insulating rim to retain some of the heat generated by muscular activity by the bees in the center of the cluster, also that the bees in the rim or periphery are said by some authorities to exchange places periodically with bees in the center of cluster to bring about a fair distribution of labor and that the temperature in the center, or inside the rim, where bees are clustered more loosely, never gets lower than 57° F. during the winter, my neighbor marvelled. Who wouldn't be thrilled at such a marvellous phenomenon? And this is only part of the story.

Those of you who would like to delve into the matter further should read the following: Bulletin No. 96, "The Temperature of the Bee Colony," by Burton N. Gates, put out in 1914; Bulletin No. 93, "Temperature of the Honeybee Cluster in Winter", by Dr. E. F. Phillips, which appeared in 1914; Bulletin No. 988, "Heat Production of Honeybees in Winter" by R. D. Milner and Geo. S. Demuth, which came out in 1921; Research Bulletin 75, "Winter Protection for the Honeybee Colony", by H. F. Wilson and V. G. Milum, issued in 1927; and Bulletin No. 175, "The Metabolism of the Honeybee Colony During Winter", by C. L. Corkins, issued in 1930.

These bulletins should be available (but possibly some are not) at Superintendent of Documents, Washington, D. C., at a nominal price.

It will be found that there is not entire agreement among the writers of the bulletins mentioned. If there is a lack of unanimity of thought among authors on this matter, it is not surprising that the average beekeeper knows little about the inner workings of the winter cluster. At least something is known about the winter cluster and as time goes on it seems likely that more will be known. When we remember that prior to 1914, twenty-eight years ago, the knowledge of the interior of the winter cluster, its construction, behavior, etc., was largely a matter of speculation, we will have to admit that some progress has been made in recent years.

However, in the opinion of the writer, more will have to be known about the winter cluster and how bees actualy survive a cold winter, before we can understand and intelligently apply principles. —M. J. Deyell.

• • •

To continue the discussion our Senior Editor, Mr. E. R. Root, who recently made a trip into the Red River Valley district, where winters are really cold, contacted a number of commercial beekeepers and one of them will be presented by Mr. E. R. Root.

[Up in the Northwest in Michigan, Wisconsin, Minnesota, and North Dakota as noted on page 628 last issue, we had an opportunity to come in contact with various groups of beekeepers. The main topics were the ceiling on honey, the effect of M-118 to regulate sales, the shortage of the crop, and then the discussion would drift to the new orthodoxy of less packing or no packing for wintering in their respective localities. It was surprising how many were accepting the new doctrin and getting good results at less cost per colony. While heavy packing is still in effect the tendency was strongly toward less or no packing, provided the colonies were strong in two stories, young queens, young bees, plenty of natural stores, an upper entrance, and good windbreaks around the yard.

There was one beekeeper, C. S. McReynolds of Clearbrook, Minn., in Northern Minnesota who was quite in favor of giving more attention to the internal condition of the colony and less to the outside. He lives in a climate much colder than most places where bees are wintered outdoors. He is an extensive producer and has had a large

experience. I asked him to give us his views in an article and here they are.—E. R. Root.]

WINTERING OUTDOORS IN SINGLE FELT WRAPPING

By C. S. McReynolds

I am about 100 miles south of Mr. Edw. Trimble and my experience is much the same as his. I winter in two-story hives or one-story and a full shallow super of honey. I have wintered a few in single ten-frame hives.

We must have approximately 50 pounds of honey in the **top** hive. That is essential.I have seen many colonies in two and three story hives dead with as much as 75 pounds of honey below them. In sub-zero weather the cluster works up. If they eat out to the top bars they perish because they can not break cluster or go downward. I have also seen some dead with sufficient honey to the side of them. If I put in frames of honey, I put the full combs on the sides and empty ones in the center and try to do it before weather gets too cool for the bees to arrange the stores to suit themselves.

I use a small top entrance about ⅜"x1", wrap in two thicknesses of a water proof grade of **black** paper and try to arrange outyards in the sun with a good windbreak of trees to the north and west. An opening of an acre or two in the woods is ideal.

The sun shining on the black paper warms the hive inside. On sunny days when the thermometer registered zero, I have watched the bees come to the entrance, look around and go back.

I nail the paper on with pieces of lath and put a piece over the top for a cover and nail it down so that the pack is wind proof.

I use no packing on the sides. I have used dry straw on top and have packed with only the folded-over paper. I can not see any difference in the condition of the bees in the spring.

Three conditions for good wintering are a good cluster of bees, a good queen, and plenty of stores in the top story. I think our average winter in northern Minnesota is too severe for wintering without any protection, but my experience is that they do not need a lot of insulation.

Wintering Outdoors vs. Packing in Special Cellars

Now about your note on page 556, I wintered bees here for ten years in cellars. They were dugouts at the outyards. I never lost bees because cellars were too cold but several times when they became too warm. I had caves where the temperature went below freezing twice, with bees in them for four to five months and the bees came through in fine shape. Three times in particular the caves became too warm, around 50, and the bees were not worth a snap of your finger. Our winter begins around Nov. 10th and bees can not be set out until snow is gone, usually April 1st to 15th. If set out before snow is gone the bees will rush out pell-mell in the bright sunshine on snow and fall in the cold snow and be lost. But outside wintered bees will fly out of a top entrance over a snow drift on a warm day in February or March and get a cleansing flight and come back to the entrance and crawl in. I also find bees wintered outside will not rush out when weather is unfavorable for flight. A few may venture out and get lost, but not enough to weaken the strength of the colony.

Winter Brood-rearing

Cellar-wintered bees do not rear brood if cellar conditions are right until set outside. A number of times I set my bees out of the cellars when they were of good strength. Two weeks later the old bees had disappeared and I had a handful of bees, some chilled brood, and a queen.

Outside wintered bees have a small patch of brood in two combs the latter part of February. This is usually about the size of a man's hand. These young hatching bees maintain the strength of the colony and it gradually increases instead of decreases.

We have cold windy days and frosty nights in April and early May. If the paper can be left on until there is warm settled weather more brood is reared and none is lost from chilling.

I wintered ten years in cellars and nine years outside, and it is outside wintering for mine.

Clearbrook, Minn.

Mr. McReynolds has brought out an important point about the upper entrance, viz., that on a winter day warm enough for bees to fly, they can get out easily through the upper entrance, even over a snow drift. We have seen this a number of times in our apiaries. During the severe winter of 1939 '40 colonies in hives with upper entrances each took cleansing flights

through a ⅝" hole above the hand hold in food chamber or upper brood chamber. This upper entrance was practically adjacent to the winter cluster. It would have been impossible, due to the severity of the weather, for the bees to have gone down through the lower chamber, to use the regular entrance.

Also, what Mr. McReynolds says about having combs in the food chamber completely filled is so important that we wish every beekeeper in the North would practice this. If they did there would be fewer dead colonies in the spring than at present.

• • •

Mr. E. Martin of Goodwater, Mo., in a recent letter, gives his experience and opinion on the matter in the following:

BEES SELDOM STARVE WITH HONEY ABOVE THEM

By E. Martin

I think a colony seldom starves in its upward movement during the winter, or at least that is my experience. Last winter I lost a few colonies and a part of several others, but in every case the bees had eaten to the top bars before starving. **In other words a colony seldom starves if honey is above them.**

At the start of winter every colony should have a well organized winter brood nest in the center of the hive completely surrounded by good honey in abundance on both sides and top. This not only insures them of a good supply of food for winter but acts also as a buffer to keep the bees in the best possible position in relation to the stores.

And now we will hear from C. B. Gooderham, Ottawa, Canada, who occupies a position in Canada similar to the one held by our Jas. I. Hambleton, Beltsville, Md. The following is part of a paper read by Mr. Gooderham at the Niagara Falls International Beekeepers' Meeting held Nov. 12-14, 1941.

IMPORTANCE OF KEEPING INSULATION DRY

By C. B Gooderham

Provincial Apiarist, Ottawa, Canada

During the past few years the tendency has been towards the use of small cases or permanently packed hives. The latter, of course, eliminates the time and labor of packing and unpacking in fall and spring. The larger multiple cases are still used by many and I do not think the type of case used makes very much difference insofar as protection alone is concerned. Nor do I think the idea, that the large case acts as an ice box, a valid one for the Canadian climate because we find that if the internal temperature of any case is easily and quickly raised by the sun's rays large numbers of bees will take flight when the outside temperature is too low and thousands of them will fall to the snow and perish. I do not think the trouble lies in the size of the case but to certain internal factors.

We have stressed the importance of keeping the insulating material dry, but have given consideration to external moisture only, ignoring to a large extent the effects of internal moisture. We know that wet packing is useless as an insulator, yet we have been allowing the moisture from the hives to escape into the packing with the result that the latter has become wet and at low temperatures frozen. Many beekeepers claim that the insulating material in their cases is perfectly dry when the bees are unpacked in the spring, and we find the same thing at Ottawa. But the danger period occurred much earlier than that. Last January many of our cases were quite damp on the inside and during February they were much worse. In some of them there was ice on the inside of the covers and the packing was frozen next to the case walls in spite of the fact that air circulation above the packing had been provided for. In March, however, most of the moisture had disappeared while in early April all cases were completely dried out due no doubt to rising air temperatures which permitted the absorption of the moisture. It does not follow that because the packing is dry when the bees are unpacked it had been so all winter. In the case just cited our bees had the least protection when most needed because of wet, inefficient insulation. It is not sufficient for the moisture to escape from the hive alone, it must also be carried to the outside of the case. Ventilation in a bee cellar is largely to carry the moisture out of the cellar, why not the same for wintering cases?

Moist air is lighter than dry air at the same temperature; therefore, it will gather at the top of the hive. To let it escape into the top or side packing is soon going to convert the packing case into an ice box, for when this air meets the cool air from outside, the moisture it contains will condense and become water which in turn becomes ice at 32 degrees. It looks to me as if the top entrance or a combination of both top and lower entrances is the solution. With lower entrances alone the moisture-laden air at the top of the hive is likely to condense and fall to the bottom of the hive, and then run out as water. Alfonsus (1) has shown that a food

with high moisture content is responsible for dysentery, while Martin (2) has shown that honey of 17.4 per cent moisture will absorb moisture from the air if the relative humidity is above 58 per cent. If the air in the hive is allowed to become saturated, then it is only reasonable to assume that some of the moisture will be absorbed by the honey. I am inclined to think that the moisture given off by the bees has been largely responsible for past winter losses, simply because insufficient provision has been made for it to escape from the case as well as from the hive itself.

(1) Alfonsus, Erwin C.—1935. The Cause of Dysentery in Honey Bees. Jour. Ec. Ent. 28:2.568.

(2) Martin, E. C.—1939. The Hygroscopic Properties of Honey. Jour. Ec. Ent. 32:5.660.

• • •

MORE ABOUT DAMPNESS AND UPPER ENTRANCE

By Leslie W. Franks

In an effort to overcome dampness which is referred to so much, I found, through my experience in various engineering processes for manufacturers, that the requirement for relatively dry air did not necessarily require the removal of all water in the area but that if the excess moisture could be condensed into water, its presence would not be objectionable as it would not again evaporate into moisture except at a high temperature.

This thought led me to paraffin the entire interior of the hive, inside cover, outer cover, and even frames, with the result that an increased precipitation of water was had which would run out of the hive having a little more than usual forward slope but that the condensed water would easily run down the paraffined sides which would otherwise soak into frames and hive-body. With the usual ⅝ in. hole in the food chamber, condensation was facilitated with the result that the upper portion of the hive where the bees are in winter was exceptionally dry due to the fact that the heavier and moisture-laden air tends to drop to the bottom of the hive before depositing its moisture content. In some cases a thin layer of ice was found on the bottom board which would melt and run out on the first warm day even in mid-winter. The method was tried out on hives packed in three different ways.

1. Hives with usual leaves and tarpaper covering.

2. Hives protected by a complete box ⅝ in. white pine covering having a sheet of roofing felt—not paper completely covering the outside.

3. Hive (Buckeye) with the usual chaff tray and open upper hole.

Each of the hives was quite strong and each contained over 40 lbs. of good honey. When opened recently they were found to be in perfect condition with slight water condensation under the covers but apparently the heat from the cluster had kept drying out the middle of the hive through the circulation of the air.

A great advantage was also found to be the fact that bees travel over a highly glazed surface to great advantage as contrasted with bare wood with some loose fibre on edges of frames and beeways and at the same time the inner surfaces had the protective coat obtained by the oil-dipping method. Once a frame is paraffined no amount of propolis will adhere with any strength and is easily removed time after time even when soft and the frames remain bright as new for a number of seasons. When spreading frames for removal, all of the propolis between them would adhere to either frame and would not have to be split as with unparaffined frames.

This system may not work in all localities. Where the apiary is in a low-lying section which receives the down run of fogs and mists, it is possible that this plan with the upper hole might bring in more damp air than without it, but this would apply to those same hives under any method of packing.

I might add that in making my inner covers I discard the wood panel and insert two panes of glass divided by a small strip of wood with a groove on each side to hold the glass. The dividing strip is used merely to make use of smaller and cheaper pieces of glass. If you have not opened a hive in winter and seen the cluster without breaking the propolis seal, or even in the early spring for that matter, you have missed much. I believe that the use of these glass tops often saves opening the hive at all beyond removing the top and further acts as a greenhouse for the sun to shine on for an hour or two on otherwise chilly spring days. Other regular inner covers are naturally used with Porter escapes for removing supers.

Harvey, Ill.

Spinster Jane Says

The trees on all our hills, and all about, are glorious now, parading their most gorgeous garb, donned for their last mad party before the coming of that stern dictator, Winter, whose regime is luckily of short duration. He bans all brightness. Black, white and somber colors only are permissible.

Honey Boy is not yet finished with his dark honey. There is no let up in employment where nickel and copper are being produced, smelted and finished for shipment, and if he takes a day off other than those allowed him, he is likely to be called on the carpet, and perhaps severely reprimanded. Forging the implements of war comes even before the production and saving of the now staple sweet, honey.

All our honey is taken off except about sixty pounds per hive, left the bees for winter. Boy's brother finished extracting, but we had to move a stove into the honey house and heat it up before we could finish the job. Quite a few containers remain to be filled, but these are to wait until Boy's "long change" next week-end, when he will have a couple of free days. In the meantime, we are supposed to bring that big, sticky, honey-tank into the kitchen, and park it beside the stove, that the honey may remain liquid.

Oh these men! What do they care how things look! Results are what count with them. And are they always considerate of women-folk? I'll say they are not! Is the fault in their up-bringing, or is that sense of superiority inborn in all male creatures? In India, at one time, girl babies were cast into the Ganges, but the birth of a boy baby was a wonderful event to be celebrated. Yes, this superiority complex is the bit of paganism still remaining in males, like that strain of the Old Adam in us all.

But bees will soon be put in winter shelters, and us women-folk will be shut indoors, with reading and letter-writing for recreation, and, so as not to make this spiel all bees and adverse criticism of the men, let me tell you a thing that happened recently here in our community.

A few days ago one of our neighbors and his wife were awakened by the frenzied bawling of a calf, and the roaring and commotion of all their stock, turned for the night into a bush lot near the house.

It was dark outside, would be darker still in the bush, and there wasn't a gun in the house. There wasn't a thing that could be done.

With the coming of daylight, they sent an S. O. S. call over the telephone to us, asking that Boy's younger brother come at once, and bring a rifle with him.

At once he answered the call, and after searching awhile, found the calf, about 250 pounds in weight, dead, its neck and shoulders half eaten away, some distance from the spot where it had been killed. It all spelled the work of a bear, a mighty big one, too, as the calf had been carried, not dragged.

Vowing vengeance, the two borrowed a bear-trap and set it, then went home to await developments. Next morning the trap was gone, though they had fastened a big ash log to it as a drag. They followed it and found it some distance away, empty, except for two hind toes of a cub bear. He had scratched and torn up trees all around, trying desperately to get free, and had succeeded. Bruin then was a lady, and, quite undaunted, she had carried the calf about ten rods further through tangled underbrush and over marshy ground, then had eaten nearly a quarter of her kill and decamped. Although the trap was reset, she has not yet reappeared. The cub of course is nursing a sore foot. Bruin, herself, is sated with meat, possibly sleeping.

Another man told the boy, "If she doesn't come back, I can take you to his den". Next month we hope to report bruin's finish.

This isn't her first crime. Various sheep and calves have mysteriously disappeared, and now we blame it all on her.

We, here, are wondering just when the pervading odor of beeswax, and extracted honey will lure one of her kin to our bee-yard. Our men are hoping for the day, as only bears killed on our own property will bring the coveted bounty, and as we understand it, that bounty is paid only from August to November.—Spinster Jane.

Asked and Answered

Quantity and Quality of Winter Stores

Question.—Will you please inform me what to do about taking off my fall honey? I have used a double deep brood chamber all year. Much of the honey is not capped. Since it does not meet the requirements of having a large percentage of the frames capped I'm at a loss to know what to do. Perhaps my bees have had too much space all year. Up until three or four weeks ago I had plenty of brood in the deep supers just above the bottom hive. Shall I try to force all the bees into one hive box or use the two hives for winter quarters?—Ben Temple, Ohio.

Answer.—(This was written Oct. 5, 1942.) If your upper brood chambers, sometimes called food chambers, are well filled with honey in addition to some honey in the lower brood chambers it would seem that this amount should be sufficient for wintering successfully. Even though the honey in the upper brood chambers may not be all capped over at present, the bees will have time to cure or ripen it properly during the next few weeks before cold weather sets in. If, perchance, the combs in the upper brood chamber are not well filled with honey, it might pay you to put the fullest combs into a single brood chamber, remove the lightest combs, then feed sugar syrup. If, however, as already stated, the upper brood chambers are quite well filled, we would suggest wintering in double brood chamber hives. Reducing the entrances down to smaller dimensions would help the bees to ripen the honey in the combs.

Keeping Two Races of Bees in One Yard

Question.—Is it possible to keep Italians and Caucasians in the same yard? I have Italians now but have always wanted to try either Caucasians or Carniolans. What I had in mind was getting two or three swarms just to see how I liked them and was wondering if it would be all right to keep them in the same yard with the Italians.—Jason Cady, New York.

Answer.—It is possible, but perhaps not practicable to attempt to keep two races of bees in the same apiary. If you would requeen all colonies each season this would help to maintain a pure strain of each race of bees. The trouble is, however, that some queens may be superseded, possibly unknown to the beekeeper, and these virgins may mate with drones of another race. This, of course, will result in intermingling of races and furthermore may result in cross bees.

Getting Queen Cells Raised

Question.—Why do I fail to get good cells above a queen-right colony? The books say that the best queen cells are raised above a queen excluder in a queen-right colony. In my experience that definitely is **not** true. In this situation my bees neglect or even tear down queen cells except during swarming season. To get good cells except in swarming season I used the following method: The first step is to find a strong colony that is to be requeened due to bad disposition or some such defect not injuring the effectiveness of the bees as cell-builders. Next the colony is made queenless **and** broodless; the queen is killed, and all the bees are shaken off the brood. A queen excluder is put over the brood nest of a good colony, and the beeless brood is put on this so that nurse bees immediately come up and care for it. A bar of queen cells is made and given to the queenless and broodless colony, and the next day its brood is returned to it and the bar of started queen cells is placed in the favorable position below the center of the brood nest. With the brood will go all the nurse bees obtained from the other colony. The **queenless** colony will now build good queen cells.—H. S. Rogers, Illinois.

Answer.—The upper story of a queen-right colony is not a favorable place to grow queen cells. The natural place for bees to start queen cells is close to the hive entrance where incoming field and nurse bees congregate and receive nectar and pollen. We have not had our cells built in a queen-right colony for several years. Our method of growing cells is somewhat like the method which you describe. We use a strong colony and remove all the combs in the colony except two that contain no unsealed brood or eggs. The other combs are shaken back in the grafting hive with the two combs containing honey and pollen. A space wide enough to take a frame should be left between them; the rest of the space should be filled with chaff division boards. In about two hours this space between the combs is full of bees returning from the field. In about two hours a frame containing 3 cell bars of 15 grafted cells each are placed between the two combs of honey and left there until the virgins are about to emerge, when they are put into the nursery cages. We do not introduce cells as too large a percentage of them are destroyed. Unsealed cells are usually accepted. We have about 80% of the grafted cells accepted and 75% safe introduction of virgins.—Mell Pritchard, formerly Queen Breeder for The A. I Root Co.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate: 8 cts. per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

HONEY FOR SALE

CLOVER EXTRACTED in new sixties. H. G. Quirin, Bellevue, Ohio.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

FANCY IOWA white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

CHOICE MICHIGAN white clover honey in 60's. L. S. Griggs & Son, 711 Avon St., Flint, Mich.

WILL HAVE more tupelo honey May 20th. Marks Tupelo Honey Co., Appalachicola, Florida.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, O.

HONEY FOR SALE—We buy and sell all kinds, any quantity. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York.

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Onsted, Michigan.

COMB HONEY—Fancy white, $5.; No. 1, clover, fancy buckwheat, or amber, $4.50; No. 1 buckwheat or amber, $3.75; No. 2 11 oz., $3. C. B. Howard, Geneva, N. Y.

HONEY PACKERS—Write us for prices on carload lots of California and Western honeys. We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, Calif.

NEW YORK State comb and extracted honey; buckwheat and clover; any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

SOLD OUT of Michigan clover honey. We thank you. Will see you another season, with more bees. Again thanking our many customers, we remain, E. D. TOWNSEND & SONS, Northstar, Michigan.

FANCY WHITE CLOVER COMB HONEY, $5 case; No. 1, $4.50. In window front cartons. Good used 60's, 35c case. Extracted honey and bench metal working lathe wanted. Bizzy Bee Ranch, No. Abington, Massachusetts.

FOR SALE

QUEENBEE PAINTING outfits, $1.00 postpaid. Southwick Apiaries, Waban, Mass.

WAX WORKED into quality medium brood foundation for 16c per pound: 100 pounds, $12. Fred Peterson, Alden, Iowa.

COMB FOUNDATION at money-saving prices. Plain, wired and thin sections. Wax worked at lowest rates. Comb and cappings rendered. Robinson's Wax Works, Mayville, N. Y.

FOR SALE—883 shallow frames, 889 beeway holders, 8 and 10 frame supers, cleaned, one-half catalog price. John Sueper, Webster City, Iowa.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Michigan.

THE ONLY complete line of wax rendering equipment ever offered—the "Perfection" Line. A size and type suitable for every commercial beekeeper. Write for descriptive circular. Robinson's Wax Works, Mayville, N. Y.

SAVE MONEY by letting us work your wax into wired or regular comb foundation. Large catalog describes everything. You pay only wholesale factory prices, as we have no agents. Walter Kelley Co., Paducah, Kentucky.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE— We will not guarantee any honey buyer's financial responsibility, and advise all beekeepers to sell for cash only, or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

CASH PAID for carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wisconsin.

WANTED—Pure aster honey. Send sample and price. Robert Lane, Greeneville, Tenn.

WANTED—White and amber honey; any amounts. D. F. Treap, 317 Keenan Ave., Cuyahoga Falls, Ohio.

WANTED—Honey and beeswax Mail samples, state quantity and price. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—Comb, chunk comb, white and light amber extracted honey. Any amount. Central Ohio Apiaries, Millersport, Ohio.

HONEYDEW WANTED — About 300 lbs. Send sample and price to Joseph Moser, 3256 No. Marshall Street, Philadelphia, Pa.

CASH PAID for extracted clover honey. Send sample and best price. Clover Bloom Honey Co., General Delivery, Shrewsbury, Mass.

HIGHEST cash return made the day we receive your beeswax. Write for shipping tags and quotations. Walter T. Kelley Co., Paducah, Kentucky.

WANTED—ORANGE BLOSSOM HONEY, also white clover. Extracted comb and chunk, any amount. Lose Bros., 206 E. Jefferson, Louisville, Ky.

CASH PAID for extracted white clover or light amber. Send samples and best price to Honeymoon Products Co., 39 E. Henry St., River Rouge, Mich.

WANTED— White clover and light amber honey. Any amount. Cash at time of delivery. Clover Blossom Honey Co., 712 Kossuth St., Columbus, Ohio.

WANTED—Extracted honey in ton lots or more. Send samples and quote price delivered here. C. J. Morrison, 1235 Lincoln Way West, South Bend, Ind.

WANTED—All grades of comb and extracted honey. Bee supplies and honey containers for sale. Prairie View Honey Co., 12243 12th St., Detroit, Mich.

HONEY WANTED—Truck or carload lots delivered to Sioux City, Iowa. Write us at Wendell, and submit sample. R. D. BRADSHAW & SONS, Wendell, Idaho.

WANTED—We pay cash top price for clover honey in 60-lb. tins. Any quantity. Send samples and best price. Cloverdale Apiaries, F. M. Babcock, Fredonia, N. Y.

WANTED—White and light amber extracted in 60's. Also beeswax. Send samples with best CASH price. We carry complete line of Owens-Illinois new "DURA-GLASS" honey containers. Honey and wax accepted in payment. ALEXANDER COMPANY, 819 Reynolds Rd., Rt. 3, Toledo, O.

BEES AND QUEENS FOR SALE

WILL MANAGE colonies on shares or will buy with crops. L. Franks, Harvey, Ills.

CAUCASIANS, package bees, and queens. Write for 1943 prices. Lewis & Tillery Bee Co., Greenville, Ala.

SELECT Italian queens, untested, 75c; tested, $1.50. WHITE PINE BEE FARMS, ROCKTON, PENNA.

BRIGHT ITALIAN AMERICAN QUEENS. Wintered in strong nuclei, 70c each. D. W. Howell, Shellman, Georgia.

IMPROVED ITALIAN queens, 50c; from a strain that produced over 600 lbs. of honey per colony. Henry Loehr, Caldwell, Tex.

THREE-BANDED Italian bees and queens. Let us quote you prices for 1943. Alamance Bee Company, Geo. E. Curtis, Mgr., Graham, N. C.

FOR SALE—400 10-frame colonies, equipment good, guaranteed no disease. No reasonable offer refused. Ernest Sires, Stanfield, Oregon.

CAUCASIAN BREEDERS ONLY—Laying queens, 75c; tested, $2.00; 2-lb. package and queen, $2.30; 3 lbs., $3.00. Miller Bros., R. D. 1, Three Rivers, Texas.

WANTED TO BUY

WANTED—Used honey pump. Frank Kearns, Austin, Minn.

WANTED—New or used Simplicity Extractor, 45-frame, and large Brand Melter. Give particulars in first letter. Box 2, Gleanings, Medina, Ohio.

HELP WANTED

WANTED for season of 1943, helper in system of 23 apiaries, about 1000 colonies. Must be strong and reliable, preferably with some experience. Possibly a permanent job, with opportunity for share of returns. Ray C. Wilcox, Odessa, N. Y.

HONEY WANTED

Carloads and less - all grades - send samples, state quantity and delivered price.

Honey Sales Co., Minneapolis, Minn.
1808 No. Washington Ave.
Send for container price list

WANTED--Extracted Honey All Varieties
Send samples and delivered prices to
JEWETT & SHERMAN COMPANY
Cleveland, Kansas City and Brooklyn

WANTED—White and amber extracted honey. Fancy comb, also No. 1 comb honey. Comb honey in shallow extracting frames. Beeswax. We render old comb into wax. Prompt remittance. Write us.
THE FRED W. MUTH CO. • CINCINNATI, O.

HONEY LABELS
BEAUTIFUL DESIGNS
THE A. I. ROOT COMPANY
MEDINA, OHIO

PATENTS AND TRADEMARKS
Williamson & Walton
Munsey Building
Washington D. C.

THANK YOU
for our very best year. We regret that we had to turn down a good many of your orders. For 1943 book early.
Weaver Apiaries
Navasota, Texas

QUESTION:

What organization is the beekeeper's best friend?

See page 704 for answer.

We Ship No Bees or Queens After June 1st

for the remainder of the season. That we may have better post office service we are changing our address from Brooklyn, to Castleberry, Ala.

Caucasian Apiaries

Castleberry, Ala.

Home of genuine Mountain Gray Caucasian Bees

" NOTICE ! "

No more queens for this year, but will endeavor to have them next year as usual. Thanks to every one helping to make this our banner year.

BOLLING BEE CO., Bolling, Ala.

Carniolans ! -o- Caucasians !

We want to thank our many customers for the past season's business. At times we could not keep up with all orders. We are preparing to take care of a bigger volume next season

ALBERT G. HANN, Glen Gardner, New Jersey

BEEKEEPERS ITEM

Serving the beekeeping industry for a quarter century without bias or prejudice. "The forum for the thoughtful." One year $1.00; two years, $1.50; sample copy, 3c stamp.
With Gleanings it provides a combination that covers the beekeeping field.
Both magazines for one year, $1.75

BEEKEEPERS ITEM
P.O.Box 687 San Antonio, Texas

WANTED—Experienced man in queen, package, and honey production. Year around work. Give full particulars when replying. Al Winn, Rt. 1, Petaluma, Calif.

MAGAZINES

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy free. Yearly, 7c6d. Apply Editor, Indian Bee Journal, Jeolikote, Dist., Nainital, U. P., India.

A BEE JOURNAL edited and published for Western Beekeepers. One dollar per year. Clubbed with Gleanings for $1.75 per year. Western Honey Bee, 3905 Lemon St., Riverside, California.

POULTRY PROFIT-MAKING. Monthly tips on raising, laying, feeding. New ideas. Get America's leading poultry magazine. One year 25c; five years $1. Poultry Tribune, Dept. 19, Mount Morris, Ill.

READ the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, P. O. Box 43, Cleveland, Johannesburg, S. Africa.

WESTERN CANADA BEEKEEPER, official organ of the Manitoba Beekeepers' Association, one year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $1.60. Wallingford Building, Winnipeg, Canada.

MANY BEEKEEPERS have proven raising fox, mink, nutria, muskrats, rabbits, highly profitable. Send dime for sample copy. Canada's oldest fur farming magazine telling how. Fur Trade Journal of Canada, Box 31, Toronto, 2, Ontario.

THE BEE WORLD—The leading Journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free, 12 cents stamps. Membership in the Club, including a subscription to the paper 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

No More Pettit's Queens This Year

We thank our many customers for a good summer business. Now booking orders for Package Bees for 1943. We will be ready.

Morley Pettit - - Tifton, Georgia

Send your cappings and old comb to MUTH for rendering into beeswax. . . .
THE FRED. W. MUTH CO. Pearl and Walnut Cincinnati, Ohio

BETTER-BRED QUEENS Three-banded Italians

Be prepared for 1943 by booking your orders early, and by buying our improved stock of bees.

CALVERT APIARIES, CALVERT, ALABAMA

CARNIOLANS Honey-test queens will be offered for 1943 season.

EPHARDT'S HONEY FARMS, PLAUCHEVILLE, LA.

HONEY FRUIT CAKES

(Continued from page 659)

milk. Combine two mixtures, stirring until well blended. Place batter in prepared pans, filling two-thirds full. Steam 2 hours and bake 1 hour in slow oven, or bake in slow oven 250 degrees F., 4 hours. If baked in oven place pan of water on low rack of oven. Cakes may be decorated after steaming and before baking by arranging fruits and nuts dipped in honey over the tops of the cakes.

Honey Butternut Fruit Cake

One-fourth cup shortening, 1 cup honey, 2 eggs, 2½ cups sifted flour, 1 teaspoon salt, 1 teaspoon soda, 1 teaspoon cinnamon, 1 teaspoon nutmeg, ¾ cup sour cream, 1 cup raisins, 1 cup chopped butternuts, and ¼ pound citron, sliced fine.

Cream shortening and honey. Add beaten eggs. Sift together flour, salt, soda, and spices. Add alternately with sour cream, beating hard. Stir in raisins, nuts, and citron, blending thoroughly. Pour into two prepared loaf pans. Bake in slow oven 275 degrees for about 3 hours, providing moisture on lower shelf of oven.

Honey Applesauce Fruit Cake

One cup honey, ½ cup butter, ½ cup raisins, ¾ cup water, 1 cup thick unsweetened applesauce, 2 teaspoons cocoa, ¼ teaspoon salt, 1 teaspoon cinnamon, 1 teaspoon cloves, 2 cups sifted flour, 1 teaspoon soda, and 1 teaspoon lemon extract.

Combine honey, butter, raisins, water, applesauce, cocoa, salt, and spices. Heat to boiling point. Cool to luke warm. Then stir in flour sifted with soda; add lemon extract and blend thoroughly. Pour batter into prepared pan. Bake in moderate oven, 350 degrees F., about 1 hour. Brush top with honey.

Aurora, Nebr.

Rossman & Long

Box 133 Moultrie, Ga.

Say:

A chicken ain't nothing but a bird.

A queen ain't nothing but a bee.

Neither is a drone anything but a bee.

Queens properly produced from Proven Mothers and mated to drones of tested stock are really "QUEEN MOTHERS" any beekeeper should be proud of.

PACKAGE BEES

headed by such Queens are our specialty. We have our own queen yards and produce the bees for packages. You will find them exceptionally Productive, Gentle, and Conservative of stores.

NOW is the time to start planning for your 1943 needs. Let us supply you with packages of uniform quality and weight.

Place your order early. This will help us to plan ahead and serve you better.

BUY BONDS.
KEEP'EM FLYING.

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"Australasian Beekeeper"
Subscription 5 shillings per year. Start any time. Inquire for International Money Order for 5 shillings (Australian) at your Post Office.
Write now to The Editor, P. O. Box 20.
West Maitland New South Wales
Australia

When Writing to Advertisers Mention Gleanings

YORK'S PACKAGE BEES and QUEENS

WE wish to thank all of our customers for a great season. If prices are not frozen below cost as set by many during the past summer, we hope to serve you again with highest quality during 1943.

YORK BEE CO., :: Jesup, Georgia, U. S. A.

The Universal Apiaries

A NOTE ON HOUSED BEES

(Continued from page 662)

are to be found about the shore of the lake and in the nearby river bottoms, even in the driest times, but other bees have equal access to them. Honey ripens remarkably fast in my housed colonies. This may enable the bees to speed up production. I know it helps the beekeeper to operate with fewer frames if he is willing to extract as soon as the combs are sealed. I try to keep young and vigorous queens of the best quality that I can find. This no doubt has considerable affect on the yield and explains my success, but it is attained with housed bees.

In conclusion, I feel justified in recommending that the small beekeeper utilize out-buildings to house bees whenever this plan fits in with his possibilities. It has succeeded for me beyond my rosiest expectations. The bees are easier to care for and the equipment is practically permanent since it is not subjected to weathering.

Waco, Texas.

• • •

JUST NEWS

(Continued from page 689)

Bulletin Number 18, September 16, 1942, of the Selective Service System, which is available at the offices of the local boards. These provisions apply not only to direct production, but also to distribution and marketing.

• • •

"Honeybees—Clover Seed Boosters," is the title of an extremely interesting and informative leaflet, just off the press, by Dr. W. E. Dunham, Extension Specialist in Beekeeping, Ohio State University, Columbus. This circular is available for state and county staff neighborhood leaders and has been written especially for war-time extension work. The contents of the circular are so pertinent that we hope to present it in full in a near future issue.

Fine Christmas Gift

Exceptionally large demands for this extra fine beginner's book by the celebrated authority, E. R. Root, make a **new edition** absolutely necessary.

STARTING RIGHT WITH BEES

This book is all that its name implies. It contains information on all of the important subjects connected with beekeeping. The best part is that the 104 pages contain over 180 illustrations to help the persons starting in on this fascinating adventure to succeed.

Only 50 cents With one year's subscription to Gleanings in Bee Culture, $1.25 (in U. S. A. and Canada).

THE A. I. ROOT COMPANY
MEDINA, OHIO

NOSEMA DISEASE CONTRIBUTES TO WINTER LOSSES AND QUEEN SUPERSEDURE

(Continued from page 661)

for the colonies containing infected queens. The importance of Nosema in queen supersedure, however, is still in the speculative stage.

The infection of queens by Nosema appears to be a matter of chance, since some colonies heavily infected early in the season maintained healthy queens throughout the summer. Such colonies required strengthening by uniting healthy bees. On the other hand, several infected queens were found in over-wintered colonies, weakened or dead because of infection of the entire worker-bee population. The latter would not be considered cases of supersedure.

Summary.—Observations are presented which show that winter losses in the form of weakened colonies may be due to infection by the protozoan **Nosema apis.** At least some types of dysentery are associated with a Nosema infection. Long confinement probably intensifies the Nosema problem. Infection in free-flying colonies is probably reduced, because the sick bees fail to return to the hive. Nosema, therefore, is less important during the summer than in winter or early in the spring. Strong colonies withstand Nosema infection better than small colonies. Infected bees have been found at all seasons. Heavy Nosema infection prevents normal brood-rearing. Nosema shortens the life of worker bees and causes the supersedure of infected queens.

MINNESOTA AND NORTH DAKOTA MEETINGS

(Continued from page 685)

cooperation between the beekeeper and the inspector. He presented some of the difficulties and how he and his deputies were meeting them.

Dr. J. A. Munro spoke on the subject of handling honey. In this he covered methods of treating and filtering and the very great importance of avoiding over-heating or keeping honey hot too long.

Dr. Mykola Haydak gave an interesting address on honey as a food. He referred to the importance of mineral content and late discoveries by himself and Dr. Tanquary on vitamins in honey, especially Vitamin B. He told of his experiments on eating honey alone as a food and then later honey and orange juice.

Mr. Remer of the Sioux City Cooperative shown in Fig. 3, spoke of the unfortunate condition of price ceilings on honey and the need of something more definite than had been proposed by which we now have several price ceilings in one locality on the same honey based on a price of last March. Packers and honey producers honestly don't know what prices they can or dare make or accept. Mr. Remer is a forceful speaker.

As stated in our last issue, we had a number of interviews with several prominent beekeepers in Minnesota. While some pack as formerly, others use only single thickness of slaters felt with a small upper entrance to allow moisture to escape. These men all saw the importance of having two-story powerful colonies, young queens, young bees, with plenty of honey and pollen.

NEXT SEASON

We are all wondering what next season will bring, and of course none of us can tell, but as far as we know now we will still be shipping Bees and Queens and doing our utmost to give the same service as always. Prices may be slightly higher to take care of extra cost, but there will be no undue advances.

The Stover Apiaries, Mayhew, Miss.

December 1, 1942 is Closing Date

MAIL YOUR ENTRY SOON

$100.00 FIRST PRIZE

$50.00 Second Prize; $25.00 Third Prize

For the Most Practical Method of Producing Beeswax from Commercial Hives

BEESWAX PRODUCTION

During the Season of 1942

HERE ARE THE SIMPLE RULES:

1. Write a story of 250 to 300 words of your method of producing beeswax in Standard hives.
2. Tell how you handled your colonies, giving the number of colonies operated.
3. Include a sworn statement of the number of pounds of beeswax produced from Jan. 1 to Nov. 1, 1942, per colony.
4. All entries must be postmarked not later than Dec. 1, 1942, and are the property of The A. I. Root Company. The decision of our judges is final.

WE WILL BUY YOUR BEESWAX

We are in the market for beeswax and will pay the highest prevailing prices.

Ship your beeswax to us by freight. We will pay freight charges on 100 pounds and over.

Beeswax prices come under the Government General Price Ceiling and may not be any higher than in March, 1942.

SHIP TODAY

Shipments of 50 pounds or less from places in 1, 2 and 3 Zones, can be sent by parcel post.

The A. I. Root Company, Medina, Ohio

Your beeswax can be stored by us and completely covered by our insurance policy against loss by fire. We will buy it when you are ready to sell.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933, OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, FOR OCTOBER 1, 1942.

State of Ohio, County of Medina, ss.:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared E. R. Root, who, having been duly sworn according to law, deposes and says that he is the Editor of the Gleanings in Bee Culture, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of— Post office address—

Publisher, The A. I. Root Co., Medina, O.

Editors, E. R. Root and M. J. Deyell, Medina, Ohio.

Business Manager, M. J. Deyell, Medina, O.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The A. I. Root Co., Metina, Ohio; Capt. Donald L. Demuth, New York City; Kate Gunkleman, Rt. 4, Medina, Ohio; J. T. Calvert, Medina, Ohio; H. H. Root, Trustee A. I. Root Estate, Medina, Ohio; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; R. I. Bostwick, Box 242, Vicksburg, Miss.; Alan I. Root, Medina, Ohio; Trustees Profit Sharing Fund, Medina, Ohio.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is (This information is required from daily publications only.)

E. R. ROOT, Editor.

Sworn to and subscribed before me this 1st day of October, 1942.

HAROLD C. WEST, Notary Public.

(My commission expires March 27, 1943.)

Selected Queens

3-banded Italian

QUEENS

Any quantity 50c net

The PUETT COMPANY

HAHIRA, GA

GOT A HOBBY?

YOU'LL MEET the other leaders in your field when you read the magazine that is devoted exclusively to your interest. Rush your subscriptions today.

Per Year	
$1.00	Gleanings in Bee Culture
1.00	Organic Farming
1.00	The Eastern Breeder (8 months)
2.00	Goat World
1.00	The Country Book, quarterly
1.00	Texas Livestock Journal
.20	Poultry Keeper
2.00	New Agriculture (sugar beets)
.50	Pacific Poultryman
1.00	New Hampshire Breeder, 3 yrs.
1.00	Cackle & Crow, the poultry paper
1.00	American Rabbit Journal
1.00	American Fur Breeder
1.50	American Pigeon Journal
1.50	Pigeon News
1.00	Hog Breeder (all breeds)
1.00	Amer. Hampshire(Hog)Herdsman
1.00	Sheep Breeder
1.00	The Sheepman
.50	Sou. California Rancher
1.00	American Cattle Producer
1.00	American Bee Journal
1.00	Beekeepers Item
.50	Florida Poultryman & Stockman
1.00	Florida Cattleman & Dairyman
.50	National Live Stock Producer
.50	Fletcher's Farming
1.00	Bantam Magazine

Rush your order today. All orders are acknowledged by return mail. Send cash, check, P. O. M. O., Exp., M. O., or stamps.

MAGAZINE MART

Dept GB La Grange, Ill.

Answer to Question on page 697:

THE AMERICAN HONEY INSTITUTE

Madison, Wisc.

The Institute has been in business for 14 years developing more consumer interest in honey and it has done and is doing a magnificent piece of work. Send to the INSTITUTE office for samples of recipes and printed matter available.

INDEX TO DISPLAY ADVERTISEMENTS

American Bee Journal 646
American Honey Institute ..697, 704
Australasian Beekeeper 699
Beekeepers' Item 698
Bessonet Bee Co. 647
Bolling Bee Co. 698
Calvert Apiaries 698
Caucasian Apiaries 698
Dadant & Sons 648
Ephardt Honey Farms 698
Garon Bee Co. 647
Hann, Albert G. 698
Honey Sales Co. 697
Hunt & Sons, M. H. 643
Jewett & Sherman Co. 697
Kelley Co., The Walter T. 646
Lotz Co., August 642
Magazine Mart 703
Muth Co., The Fred W. 647, 697, 698
Pettit, Morley 698
Puett Co. 703
Root Co., The A. I. Back cover, Inside covers, ...702
Root Co. of Chicago, A. I. 647
Root Co. of Indianapolis, A. I. ..642
Root Co. of Iowa, The A. I. 642
Root Co. of New York, The A. I. 643
Root Co. of Syracuse, A. I. 642
Rossman & Long 699
Schmidt & Sons, Oscar H. 643
Stover Apiaries 701
Weaver Apiaries 697
Williamson & Walton 697
Woodman Co., A. G. 647
York Bee Co. 699